

Christie DS+/DW/HD, Mirage S+/HD, DLV and Matrix S+/HD Series

Parts and Module Replacement Booklet

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Use the instructions provided in this booklet to replace any of the serviceable components in the following projectors:

- *Christie DS+6K* (38-DSP104-x5)
- *Christie DS+5Kc* (38-DSP104-x8)
- *Christie DS+8K* (38-DSP106-x3)
- *DLV1400-DX* (38-DSP102-x5)
- *DLV1920-DX* (104-017101-xx)
- *Christie DW3K/Kc* (38-DHD103-x3, 38-DHD103-x4)
- *Christie DW6K/Kc* (38-DHD106-x3, 38-DHD106-x4)
- *Christie HD6K* (104-006101-xx)
- *Christie HD5Kc* (104-007101-xx)
- *Christie HD8K* (104-008101-xx)
- *Christie HD7Kc* (104-018101-xx)
- *Mirage S+3K* (38-DSP102-x4)
- *Mirage S+6K* (38-DSP104-x6)
- *Mirage S+8K* (38-DSP106-x4)
- *Mirage HD3* (104-012101-xx)
- *Mirage HD6* (104-013101-xx)
- *Mirage HD8* (104-014101-xx)
- *Matrix S+2K* (38-DSP102-x6)
- *Matrix S+5K* (38-DSP104-x7)
- *Matrix HD2* (104-023101-xx)
- *Matrix HD4* (104-016101-xx)
- *Matrix HD7* (104-024101-xx)

Read the *Safety and Warning* guidelines provided on *page 8* before servicing the unit. All service procedures must be performed by qualified personnel only.

The following abbreviations are used throughout the manual.

BPM	Backplane Module
DMD	Digital Micromirror Device
DSBP	Dual-Slot Backplane Module
HD	High Definition
HDPD	High Definition Panel Driver
HVPS	High Voltage Power Supply
LVDS	Low Voltage Differential Signal
LVPS	Low Voltage Power Supply
PPM	Post Processing Module
SSBP	Single Slot Backplane Module
TCPD	Three Chip Panel Driver
TIPM	Ten-Bit Image Processing Module

Disclaimer

Every effort has been made to ensure that the information in this manual is accurate and reliable. Due to constant research, however, information is subject to change without notice. **Christie** assumes no responsibility for omissions or inaccuracies. Updates to this manual are published regularly as required. Contact **Christie** for availability.

1 Ordering Parts

When ordering replacement parts, please provide the following information that can be found on the product's license label:

- Christie Part Number for each item required
- Projector Model (*see ID label*)
- Projector Serial Number (*see license label*)
- Date of Manufacture (*see license label*)

Order parts from one of the following locations:

NORTH AMERICA

Christie Digital Systems, Inc.

809 Wellington St. North
Kitchener, Ontario, Canada N2G 4Y7
Tel. 519-744-8005 (*General*)
Toll Free 1-800-265-2171 (*Sales Order*)
Toll Free 1-800-221-8025 (*Technical Support only*)
Fax 519-749-2776 (*Service*)

Christie Digital Systems, Inc.

10550 Camden Drive
Cypress, CA 90630 USA
Tel. 714-236-8610 (*General*)
Toll Free 1-866-880-4462 (*Sales Order*)
Toll Free 1-800-221-8025 (*Technical Support only*)
Fax 519-749-3302 (*Service*)

EUROPE

Christie Digital Systems, Inc.

View Point
200 Ashville Way
Wokingham, Berkshire RG41 2PL
United Kingdom
Tel. +44-118-977-8111
Fax +44-118-977-8112

Christie Digital Systems, Inc.

7, av Georges Pompidou
92593 Levallois-Perret Cedex
France
Tel. +33-(0)1-47-48-28-07
Fax +33-(0)1-47-48-26-06

Christie Digital Systems, Inc.

Willicher Damm 129
D-41061 Mönchengladbach
Germany
Tel. +49-2161-664540
Fax +49-2161-664546

ASIA-PACIFIC / OTHER

Christie Digital Systems, Inc.

627A Aljunied Road
05-02 Biz Tech Centre
Singapore 389842
Tel. 65-6877-8737
Fax 65-6877-8747

Christie Digital Systems, Inc.

Rm. 1109-1116 Shartex Plaza
No. 88 Zun Yi South Road
Shanghai, 200336
People's Republic of China
Tel. +86-21-6278-7708
Fax +86-21-6270-5816

Availability ► *Not all parts identified in this booklet are available separately. Some parts are stocked as inventory and are available only until the current supply lasts.*

2 Index of Parts and Modules


Refer to *Table 1* and the *Exploded View* provided for a list of replaceable parts and where they are located within the projector.

Table 1. Index of Parts and Modules

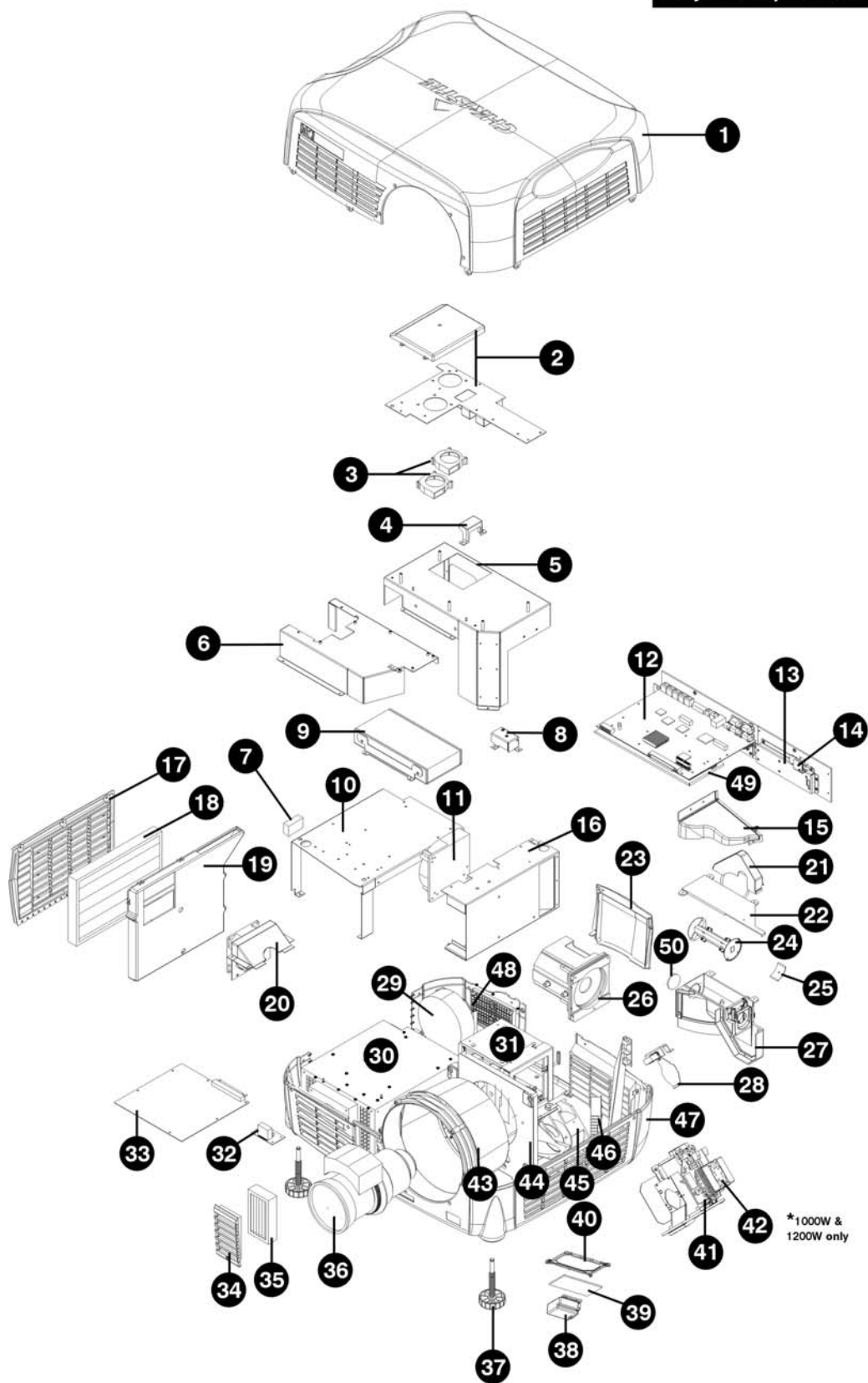
Exploded View Label	Part Name /Description	Service Kit Non-RoHS Part Number	Service Kit RoHS Part Number
1	Top cover	--	--
2	TIPM cover / baffle	--	--
3	TIPM fans (12V DC 60mm)	003-000379	003-110257-01
4	Top cover protection bracket	--	--
5	Lamp shield	--	--
6	LVPS duct	--	--
7	IR sensor (front)	03-900529-01P	03-900529-51P
8	Interlock/bracket	03-900550-01P (switch only)	03-900550-51P (switch only)
9	Low voltage power supply (LVPS)	03-000674-01P	003-120076-01
10	Lamp ballast cover	--	--
11	Optical fan #1 (12V DC 120mm)	003-000380	003-110260-01
12	TIPM PCB	03-900543-01P	03-900543-51P
13	Built-in keypad (membrane and PCB)	03-900562-01P	03-900562-51P
14	IR sensor (rear)	03-900529-01P	03-900529-51P
15	Exhaust duct	--	--
16	Intake fan duct	--	--
17	Side filter cover	--	--
18	Side filter (large) (incl. 5ea small/ large)	03-900537-01P	03-900537-51P
19	Side intake duct	--	--
20	LVPS fan bracket	--	--
21	Contrast aperture assembly (aperture only)	03-900533-01P	03-900533-51P
22	Optical tray cover /cold mirror (cold mirror only)	03-900535-01P	03-900535-51P
23	Lamp door	--	--
24	Integrator assembly	Various (see list below)	Various (see list below)
25	Integrator knob (incl. knob/spring)	03-900534-01P	03-900534-51P
26	Lamp	Various (see list below)	Various (see list below)
27	Optical tray	--	--
28	Shutter	03-900532-01P	03-900532-51P
29	Blower (12V DC 97mm for 500W and 1000W) (230V AC 97mm for 1200W)	003-000377 003-000607	003-110261-01 003-110262-01
30	Lamp ballast	Various (see list below)	Various (see list below)
31	Lamp compartment	--	--
32	AC relay	03-260656-01P	003-110228-01
33	Three-chip panel driver (TCPD)	03-260723-01P	003-110235-01
	High Definition Panel Driver (HDPD)	--	003-110399-01
34	Front filter cover	--	--
35	Front filter (small) (incl. 5ea small/ large)	03-900537-01P	03-900537-51P
36	Projection lens	Various (see list below)	Various (see list below)
37	Adjustable feet (2)	03-900528-01P	03-900528-51P
38	LiteLOC	03-900530-01P	03-900530-51P
39	Fold mirror	03-900531-01P	03-900531-51P
40	Fold mirror frame	--	--
41	Light engine	Various (see list below)	Various (see list below)
42	R, G, B DMD fans (12V DC 60mm) (for 1000W and 1200W models only)	003-000373	003-110258-01
43	Lens bezel	03-900564-01P	003-000863-01
44	Motorized lens mount	03-900552-01P	03-900552-51P

Exploded View Label	Part Name /Description	Service Kit Non-RoHS Part Number	Service Kit RoHS Part Number
45	Optical mount	--	--
46	Cold mirror heatsink	--	--
47	Bottom chassis	--	--
48	Airflow sensor	03-900536-01P (500W and 1000W) 003-000566-01 (for 1200W only)	03-900536-51P (500W and 1000W) 003-000566-02 (for 1200W only)
49	Dual slot backplane module (DSBP)	03-900556-01P	03-900556-51P
50	UV filter	03-900542-01P	03-900542-51P
Not shown	Lamp Contact PCB (HD models only)	--	003-000644-01

Additional Service Kits:

Part/Description	Service Kit Non-RoHS Part Number	Service Kit RoHS Part Number
 Ballast		
500W Ballast	03-900538-01P	03-900538-51P
1000W Ballast	03-900539-01P	03-900539-51P
1200W Ballast	03-900540-01P	03-900540-51P
Integrator Assembly		
Integrator SXGA+	03-900553-01P	003-000859-01
Integrator HD2	03-900554-01P	003-000860-01
Integrator HD	--	003-100260-01
Lamp and Filter Kits (includes lamp module, intake filters (2), instructions)		
500W Lamp and Filter Kit for HD models only	03-000832-01P --	03-000832-51P 003-120118-01
1000W Lamp and Filter Kit for HD models only	03-000833-01P --	03-000833-51P 003-120117-01
1200W Lamp and Filter Kit for HD models only	03-000834-01P --	03-000834-51P 003-120116-01
Installation Hardware / Setup Tools		
Convergence Tool Kit (incl. separate instructions)	003-000078	003-000078-02
Lenses		
0.73 :1 Fixed Lens	38-809088-01	38-809088-51
1.2 :1 Fixed Lens	38-809095-01	38-809095-51
1.2:1 R.P.	38-809093-01	38-809093-51
1.45 :1.8 :1 Zoom	38-809089-01	38-809089-51
1.8-2.5 :1 Zoom	38-809090-01	38-809090-51
2.5-4.5:1 Zoom	38-809091-01	38-809091-51
4.5-7.3:1 Zoom	38-809092-01	38-809092-51
0.67:1 CT HD	--	104-110101-01
SXGA+ 1.2:1/HD 1.1 :1 FP	--	104-111101-01
1.4-1.8:1 CT HD	--	104-112101-01
1.8-2.6:1CT HD	--	104-113101-01
2.6-4.1:1 CT HD	--	104-114101-01
4.1-6.9:1 CT HD	--	104-115101-01
SXGA+ 1.2:1/HD 1.1:1 RP	--	104-116101-01
Optional Input Modules		
RGB500 Input Module	38-804606-xx	--
RGB400 ALT Input module	38-804607-xx	--
RGB400 BA Input Module	38-804610-xx	--
PC250 Analog Input Module	38-804609-xx	--
DVI Input Module	38-804635-xx	38-804635-5x
Serial Digital Input Module (SDI)	38-804602-xx	38-804602-5x
Dual SD/HD – SDI Input Module	38-804656-xx	38-804656-5x
Accessories / Miscellaneous		
IR Remote Keypad (with laser pointer)	03-900566-01P	03-900566-51P
Engine Flex Cables	03-900542-01P	03-900542-51P
3D Stereo Sync Cable (for Mirage only)	001-100077-02	
Lens Mount Shipping Plug (required when shipping projector without lens)	03-900565-01P	03-900565-51P
Line Cord 10', 125VAC (for 500W and 1000W models)	03-001516-01P	03-001516-51P
Thermal Tape Replacement Kit for HD models only	03-900569-01P --	03-900569-51P 003-000641-01
Harness LVDS	--	003-000643-01

Part/Description	Service Kit Non-RoHS Part Number	Service Kit RoHS Part Number
Light Engines		
Light Engine SX+	003-100152	--
Light Engine HD2	03-900526-01P	--
Light Engine HD	--	003-100358-01



3 Safety Warnings & Guidelines



WARNING

Always power down the projector using appropriate procedure and disconnect all power sources before cleaning or servicing.

- All replacement procedures must be performed by qualified projector service personnel. Read all service instructions before you begin.
- Replace parts with those specified by the manufacturer. **DO NOT** use substitute parts.
- When powering down the projector, allow the cooling fans to automatically turn off (takes approximately five minutes) before disconnecting AC and removing covers.
- Non-insulated dangerous voltages may be exposed. Always unplug the projector prior to disassembly.
- Observe and follow all warnings and instructions marked on the projector.
- Observe all electrostatic precautions. Use a grounded wrist strap when handling electronic assemblies.
- Ensure the unit is serviced in a clean environment to prevent dust particles from settling on optical components.
- Wear supplied protective gloves as indicated by symbol



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the projector.

The lightning flash and arrowhead symbol within the equilateral triangle signifies the presence of non-insulated "dangerous voltage" within the projector's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

Tools Required


- It is recommended that you have the following tools on-hand when servicing any of the parts covered in this booklet.

- Electrostatic protective strap and pad
- Phillips screwdriver #1 and #2
- Slot screwdriver (optional)
- 1/4" Nut Driver
- 3/16" Nut Driver
- 9/16" Nut Driver
- Needle Nose Pliers
- Set of Hex Ball Drivers

4 Replacement Procedures

This booklet provides all procedures necessary to replace the serviceable parts found in the projector. All procedures are listed alphabetically. Refer to the *Index of Parts and Modules* on page 4 along with the *Projector Exploded View* on page 6 to help you identify the parts and where they are located.

Before you begin any procedure, make sure you have read and understood it and that you are aware of all safety and warning guidelines.

 **Power off** and **unplug** the projector before performing any of the service replacement procedures in this booklet.

 Use standard ESD precautions.


 Refer to the **Interconnection Drawing** provided at the end of the manual when reconnecting component and module harnesses.

Removing Projector Covers

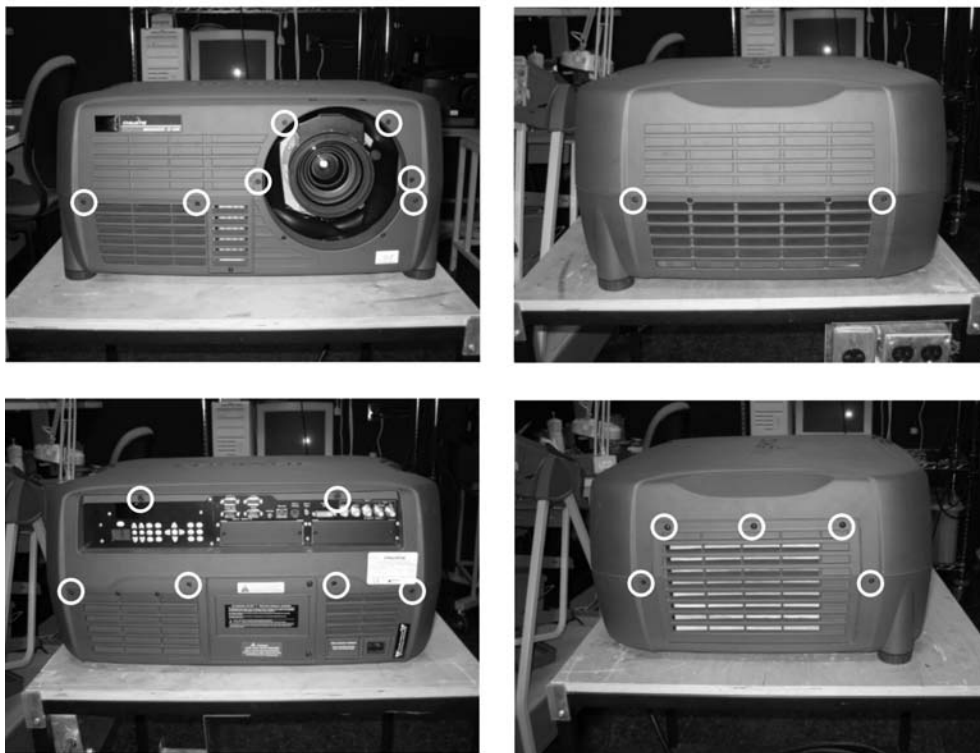
Top Cover ► (5 minutes)

Removing the top cover is the first step in accessing most of the components in the projector. To remove:

1. Remove the projection lens. See *Removing the Projection Lens*.
2. Remove any optional input module installed in Input 5 or Input 6. Refer to the *Optional Input Module* instructions later in this booklet.
3. Remove the left side filter door (three screws) and the filter. (Figure 1.)
4. Remove the 17 screws securing the top cover. (Figure 1.)
5. Slowly, lift the top cover straight up to remove.

 **NOTE:** The front IR sensor PCB is located in the front left corner and can be damaged if it is hit while removing the cover (See Figure 2 for IR location).

6. With the top cover off, you will see protective shields positioned over the electronic PCBs and light engine. If required, remove these covers to access the components underneath.

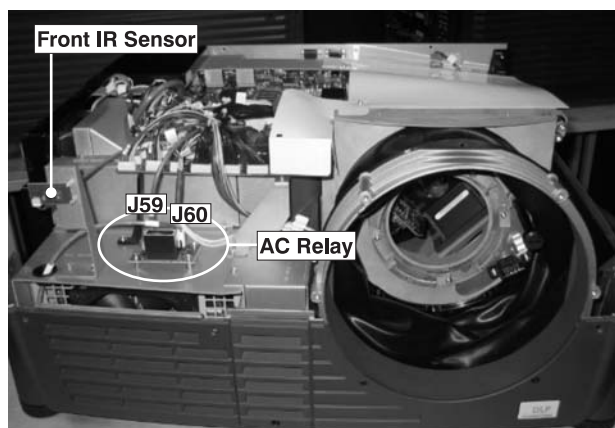
Top cover - remove 20 screws**Figure 1. Removing Projector Covers**

AC Relay Module

(10 minutes)

The AC relay module is located in the front, left corner of the projector (near the IR sensor). It is mounted to the ballast cover. To remove and replace:

1. Remove the top cover. See **Top Cover**.
2. Disconnect J59 and J60 from the AC relay module. (Figure 2.)
3. Remove the AC relay from its standoffs (four screws).

**Figure 2. Location of AC Relay Module**

Air Filters

(5 minutes for both)

Two air filters are used in this projector; one located at the front and one on the left hand side (when viewed from the front). It is recommended both filters be replaced when the lamp in the projector is replaced or sooner if the operating environment is extremely dusty. A clean air filter ensures the projector's optical components remain relatively clean.

⚠ DO NOT clean or reuse filters.
Use the clean filters provided in the service kit only.

Front ► To remove and replace the front air filter:

1. Loosen the single screw securing the front air filter cover.
2. Remove the cover and pull the filter out.

Side ► To remove and replace the side air filter:

1. Loosen the three (3) captive screws from the side filter cover.
2. Remove the cover and pull the filter out.

When replacing either air filter, make sure to install it with the wired side facing in.

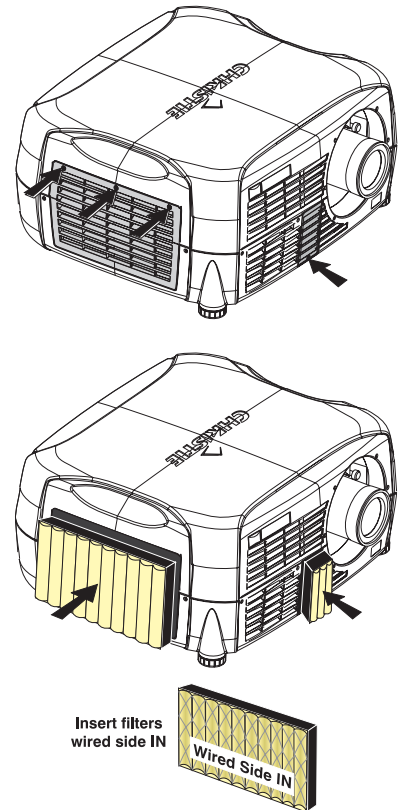


Figure 3. Removing Air Filters

Airflow Sensor

(9 minutes)

The airflow sensor is located on the lamp blower. The placement of this sensor is critical in that it monitors the amount of airflow and temperature and will cause the projector to shutdown if it is not positioned correctly.

NOTE: Make sure you use the correct sensor for your projector model. Different sensors are used in 500W/1000W and 1200W models. Refer to the parts list at the beginning of this booklet for the correct kit number. Replacement instructions apply to all models.

To remove and replace:

1. Remove the top cover. See **Top Cover**.
2. Disconnect the airflow sensor harness.

3. Notice the position of the sensor. It must be repositioned in exactly the same manner when replaced. **TIP: For 1200W models**, the sensor is mounted directly to the blower and is inserted at a specific depth. Before removing, measure and mark down the distance between the clamp and the black edge of the sensor. This measurement will help when installing the new sensor.
4. Remove the single screw securing the sensor and bracket to the lamp blower.

When replacing the airflow sensor, repeat instructions in reverse.

⚠ Make sure the sensor is correctly positioned for your specific model. See below.

For 500W and 1000W models, the sensor should be mounted so the hole in one end is pointed directly into the fan blades and there is a small gap between it and the hub of the blower. See Figure 4.

For 1200W models, the open end of the sensor should point directly into the fan blades and inserted to the correct depth, as measured in Step 3. See Figure 5.

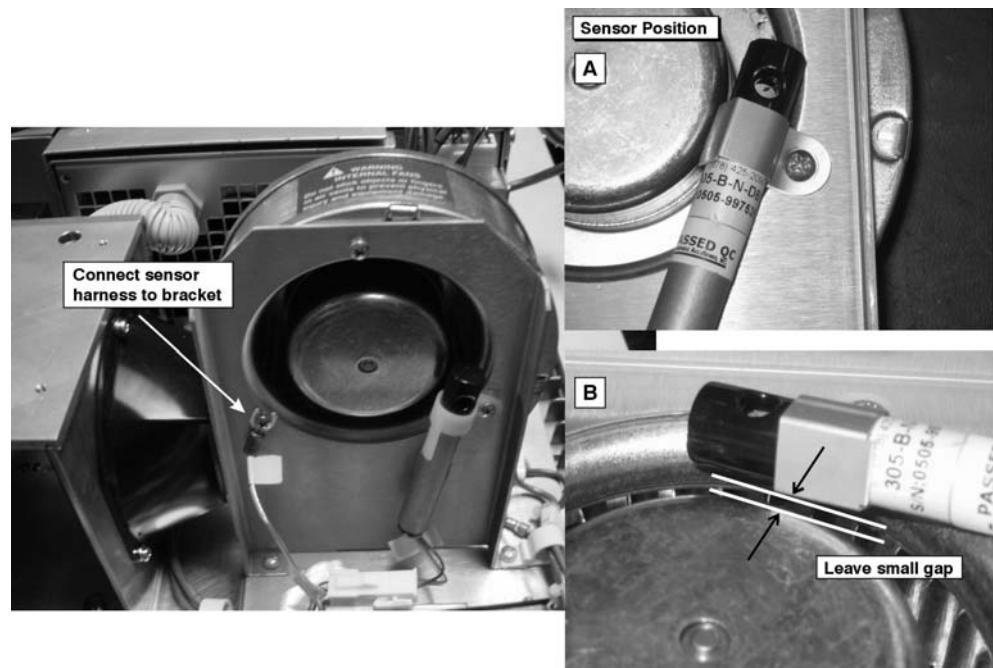


Figure 4. Airflow Sensor Position for 500W and 1000W Models

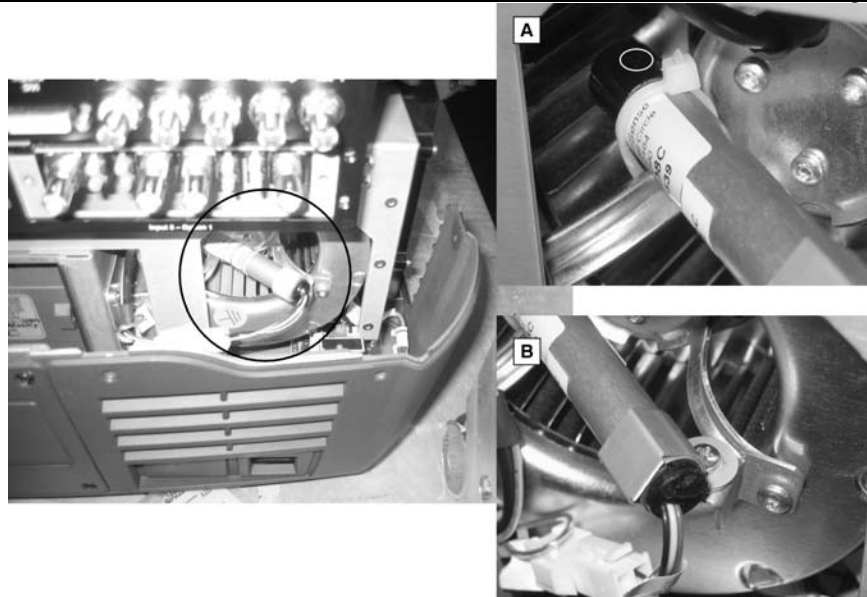


Figure 5. Airflow Sensor Position for 1200W Models

Built-in Keypad PCB

(17 minutes)

The built-in keypad is located on the rear input panel.

⚠ IMPORTANT: When a new built-in keypad is installed, its EEPROM must be updated with critical factory-defined system information pertaining to the specific projector model. Refer to the instructions provided in the service kit for programming your new built-in keypad. If ignored, the projector will not behave properly.

To remove and replace:

1. Remove the top cover. See **Top Cover**.
2. Disconnect the built-in keypad PCB from the TIPM (P37).
3. Remove the eight (8) screws securing the keypad plate.
4. Flip the keypad assembly over and remove the nut securing the ground lead.
5. Remove the six (6) screws securing the PCB to the silicone membrane. (Figure 7.)



Figure 6. Built-in Keypad

When replacing, repeat instructions in reverse.

NOTE: The screw used to secure the ground lead is longer than the other screws. Make sure you use this screw in the right location. (Figure 7)

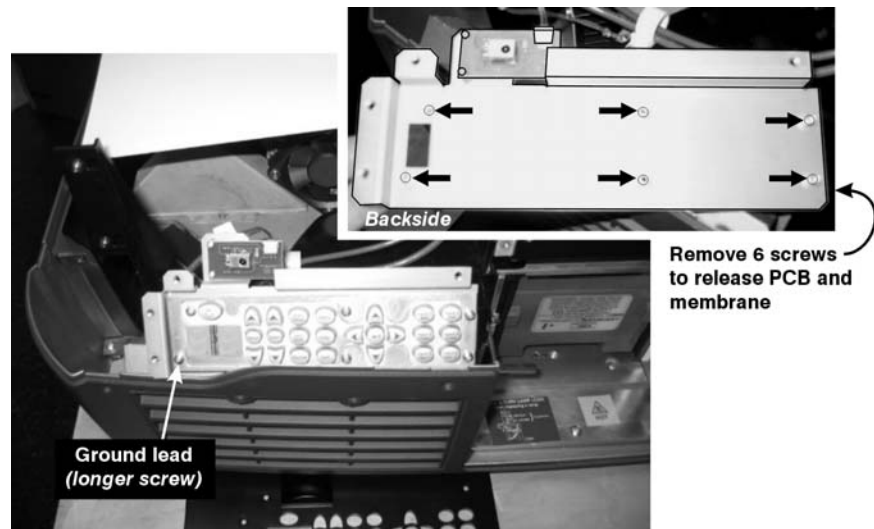


Figure 7. Built-in Keypad PCB

Card Cage (TIPM)

(13 minutes)



The TIPM card cage is located at the rear of the projector. It contains the 10-bit image processing module (TIPM), the dual slot backplane (DSBP) and any optional input module that may be installed. To remove and replace:

⚠ Observe all ESD precautions when handling any of the PCBs in the projector.

1. Remove any optional input module installed at Input 5 or Input 6. See *Removing an Optional Input Module*.
2. Remove the projector's top cover. See *Top Cover*.

3. Remove the three (3) screws securing the TIPM cover/baffle over the TIPM. (Figure 8.)

NOTE: Fans 7 and 8 are mounted to the underside.

4. Flip the TIPM cover/baffle over, leaving it to rest on another part of the projector, like the Panel Driver PCB.

NOTE: the fans are still connected to the Panel Driver PCB. Proceed to the next step without disconnecting these fans.

5. Remove the three (3) 1/4" hex standoffs from the TIPM PCB.
6. Disconnect Fan 1 (Red DMD Intake Fan - P23) and Fan 2 (LVPS Fan - P24) from the TIPM.

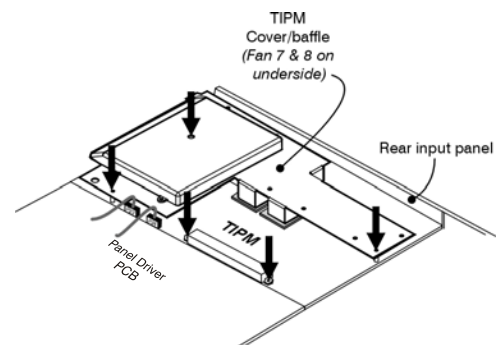


Figure 8. Remove the TIPM

7. Remove the two (2) screws located near the large connector at the front edge of the TIPM (where the Panel Driver PCB connects). See Figure 8.



Figure 9. Removing Screws from Input Panel

8. From the input panel, remove the two (2) screws where the TIPM connects to the keypad faceplate and the single screws located in the lower right hand corner. (Figure 9)
9. Raise the TIPM card cage slightly and pull it forward to disconnect it from the Panel Driver PCB.
10. Remove the TIPM assembly.

Cold Mirror



**Gloves
Required**

(18 minutes)

The cold mirror is part of the optical assembly. It is located directly behind the large heatsink. It is mounted to the optical tray using three (3) spring clips. To remove and replace:

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the two (2) screws securing the heat sink to the bottom chassis. (Figure 10.)

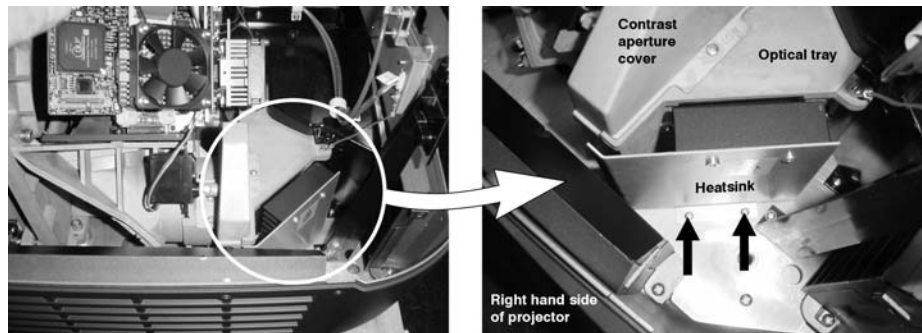


Figure 10. Removing the Cold Mirror Heat Sink

3. Lift the heat sink straight up and remove to access the cold mirror behind it.
4. Remove the three (3) screws securing the cold mirror to the optical tray. (Figure 11.)
5. Remove the cold mirror from the holder.

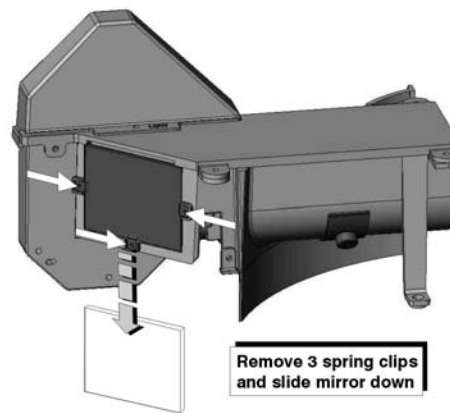


Figure 11. Removing the Cold Mirror

When replacing the cold mirror, insert the closest reflective side in toward to optical assembly. To determine which side is the reflective side, place the point of a ballpoint pen on the edge of the mirror face and look to see if a gap exists between the pen and its reflection. NO GAP indicates the closest reflective side – place this side IN.

Contrast Aperture Assembly

(13 minutes)

The contrast aperture assembly (commonly called the iris) is part of the optical assembly located next to the integrator rod assembly. To remove and replace:

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the single screw securing a white nylon protective sheet over the light engine (light shield).
3. Remove the screw securing the contrast aperture cover to the optical tray top cover. (Figure 12.)
4. Disconnect the IRIS cable connection at the extender cable and not from the Panel Driver PCB. Free the harness.
5. Remove the two (2) screws securing the motor assembly from the contrast aperture cover. (Figure 12.)
6. Remove the contract aperture assembly.

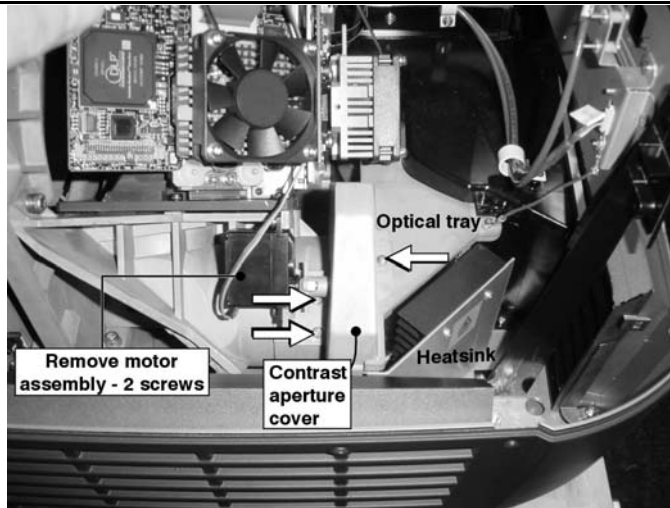


Figure 12. Accessing the Contrast Aperture Assembly

Dual Slot Backplane Module (DSBP)

(23 minutes)

The Dual slot backplane module is mounted to the underside of the TIPM. To remove and replace:

1. Remove the TIPM card cage. See **Card Cage (TIPM)** for instructions.
2. Remove the four (4) self-taping screws from the card guides located at the DSBP. (If you want to remove the card guides completely, remove the additional four (4) screws from the input panel.)
3. Remove the six (6) screws securing the PCB to the TIPM. (Figure 13)
4. Disconnect the PCB from the TIPM and remove.

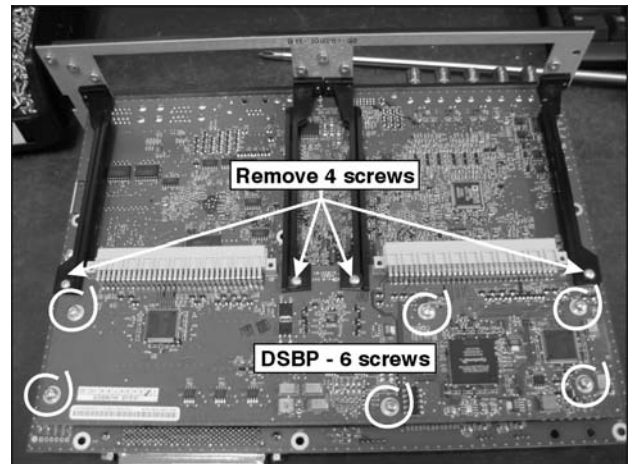


Figure 13. Removing the Dual Slot Backplane (DSBP)

When replacing, repeat instructions in reverse.

Fans, DMD (1000W and 1200W models only)

NOTE: 500W projector models do not use DMD fans.

(13 minutes)

Blue DMD Fan ► The blue DMD fan is located directly above its corresponding DMD on the light engine. It is the most easily accessible DMD fan, in that it does not require removal of any other components. To remove and replace this fan:

1. Remove the top cover and the protective white nylon cover over the light engine. See **Top Cover** for instructions.
2. Disconnect the fan harness and free it from any cable clamps.
3. Remove the four (4) screws securing the fan to the light engine. (Figure 14)
4. Remove the fan assembly.

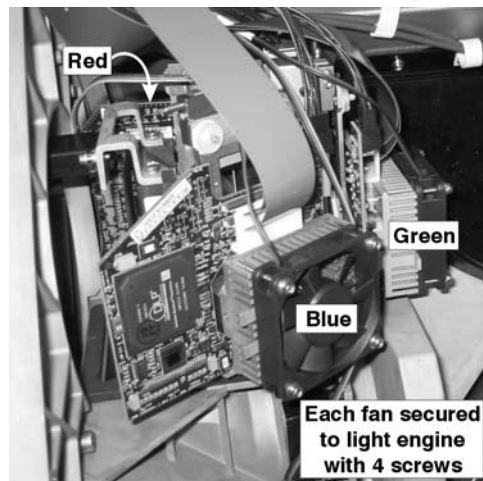


Figure 14. Location of DMD Fans on Light Engine

Red DMD Fan ► **(53 minutes)**

The red DMD fan is the most difficult of the DMD fans to remove and requires the removal of the light engine. To remove and replace:

1. Remove the top cover and protective white nylon cover over the light engine. See **Top Cover** for instructions.
2. Remove the light engine. See **Light Engine** for instructions. Once you have removed the entire optical assembly (light engine and optical mount) go to the next step. **DO NOT** separate the light engine from the optical mount.
3. Remove the four (4) screws securing the fan to the light engine.
4. Remove the fan assembly.

Green DMD Fan ► **(17 minutes)**

The green DMD fan is located directly above the optical tray. To remove and replace:

1. Remove the top cover and the protective white nylon cover over the light engine. See **Top Cover** for instructions.
2. Disconnect the fan harness and free it from any cable clamps.

3. Remove the black exhaust duct located just in front of the fan – three (3) screws. (Figure 15.)
4. Remove the four (4) screws securing the fan to the light engine.
5. Remove the fan assembly.

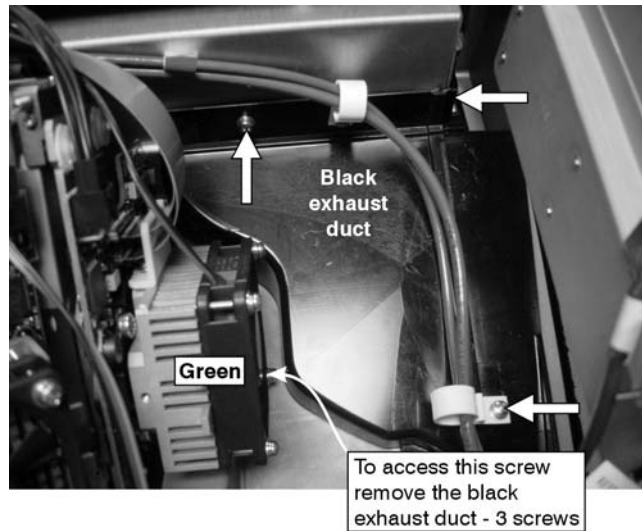


Figure 15. Accessing the Green DMD Fan

When replacing any of these fans, repeat instructions in reverse.



Make sure each fan is mounted so that the wire exits toward the top of the light engine. (Figure 16.)

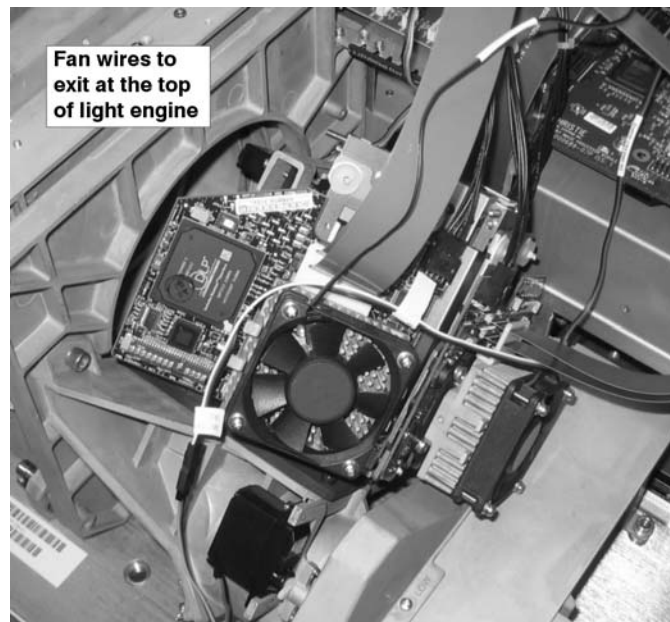


Figure 16. DMD Fan Wire Routing

Fan, Low Voltage Power Supply (Fan 2)

(14 minutes)

The LVPS intake fan is located on the left side of the projector behind the side intake duct. Its primary function is to blow air through the channel where the LVPS sits cooling it down.

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the three (3) screws from the side intake duct.
3. Remove the two (2) screws securing the LVPS fan and bracket. (Figure 17.)

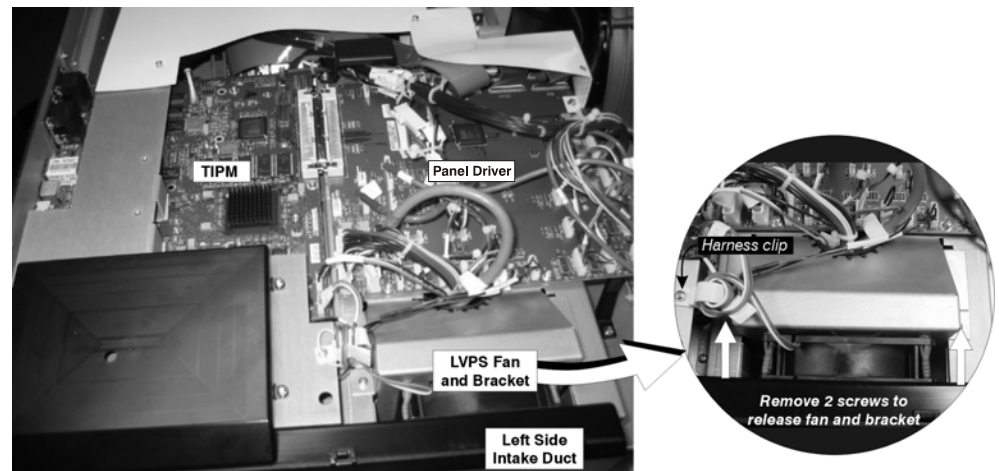


Figure 17. Accessing the LVPS Fan

4. Disconnect the fan's harness from the TIPM (P24).
5. Lift the fan and bracket assembly and flip it over to access the back – pull the four (4) blue rubber isolators off to release the fan. (Figure 18.)

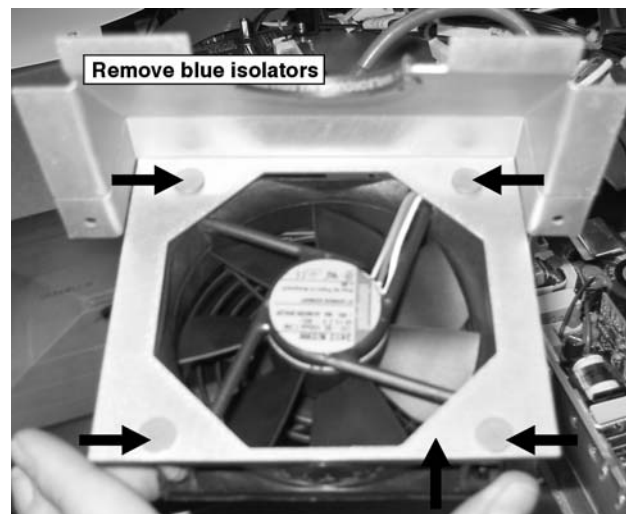


Figure 18. Removing LVPS Fan from Bracket Assembly

When replacing, use the new blue isolators provided in the kit to remount the fan to the bracket and route the fan harness through the clip located off to the side (on TIPM baffle).

Fan, Lamp Blower (Fan 3)

(49 minutes)

The lamp blower is located in the rear right corner of the projector. Located near the lamp it is responsible for generating enough airflow to keep the projector from overheating. An airflow sensor is mounted directly to the blower to ensure the correct level of air is present at all times during operation. To remove and replace:

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the Panel Driver PCB. See **Three-Chip Panel Driver (TCPD/HDPD)**.
3. Remove the TIPM card cage. See **Card Cage (TIPM)**.
4. Remove the LVPS fan assembly and the LVPS module. **NOTE: Do not remove LVPS brackets and cable connections SK5, SK6, 5V, GND, and 3.3V. See Low Voltage Power Supply (LVPS) for instructions.**
5. Remove the LVPS duct/cover by removing the black cable guide through which the flex cables are routed – two (2) screws. (Figure 23.) Then remove the five (5) screws securing the duct/cover in place. Make sure the harnessing clipped to the side of the duct is free before removing the duct.

6. Remove the light shield – five (5) screws.

NOTE: three (3) screws are used to secure the black exhaust duct near the lamp door (Figure 19.) and two (2) screws are used to secure the light shield to the bottom base plate.

7. Free cables from all clips.
8. Remove the fan.



Figure 19. LVPS Bracket

NOTE: The fan is mounted differently between models.

In 500W and 1000W models:

- a) Remove the blower and bracket as an assembly from the projector by removing the two (2) screws securing the bracket to the bottom chassis.

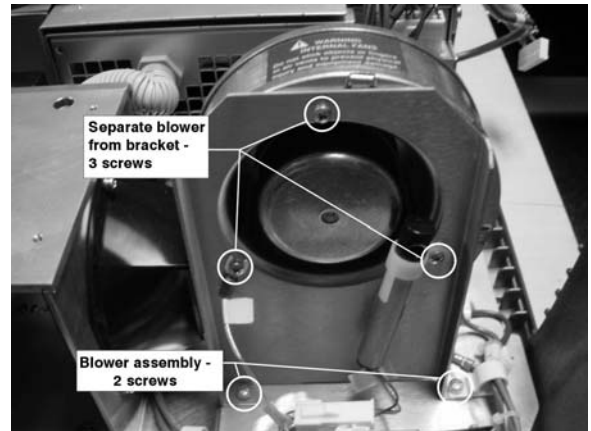


Figure 20. Removing the Lamp Blower in 500W and 1000W Models

- b) Remove the three (3) screws attaching the fan to the bracket. The one screw also secures the airflow sensor to the bracket. Remove the fan and sensor. See Figure 20.

In 1200W models, the blower is mounted directly to a side bracket by four (4) screws. Remove these four (4) screws and lift the blower out of the projector. (Figure 21.) Before removing the airflow sensor, measure how deep it is set in the blower by measuring the distance from the end of the sensor to the mount. This will help you when installing it into the new blower.

When replacing the blower in 500W and 1000W models, mount the blower to the bracket using the top screw and the left side screw. Then take the airflow sensor and mount it with the third screw to the bracket and blower. Make sure the airflow is mounted so that the hole in the one end is pointed directly into the fan blades and there is a small gap between it and the hub of the blower. See also Figure 4. Continue with repeating instructions in reverse.

When replacing the blower in 1200W models, repeat instructions in reverse. Make sure the sensor position is correct – the open end of the sensor should be pointing directly into the fan blades and the sensor should be at the correct depth as measured in Step 8. See also Figure 5.

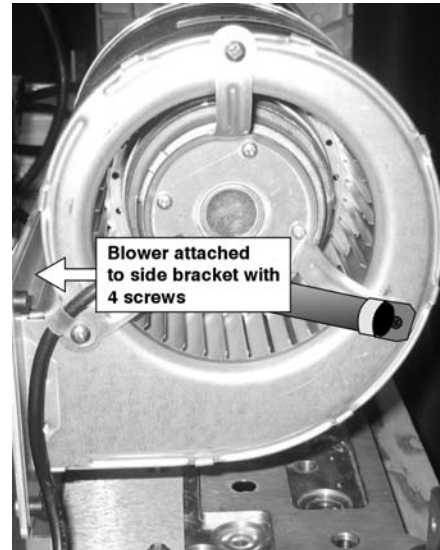


Figure 21. Removing the Lamp Blower in 1200W Models

Fan, Optical Intake (Fan 1)

(45 minutes)

The optical intake fan is located near the center of the projector. It is mounted to the inside of the duct, which is located between the ballast and the lens mount. To remove and replace:

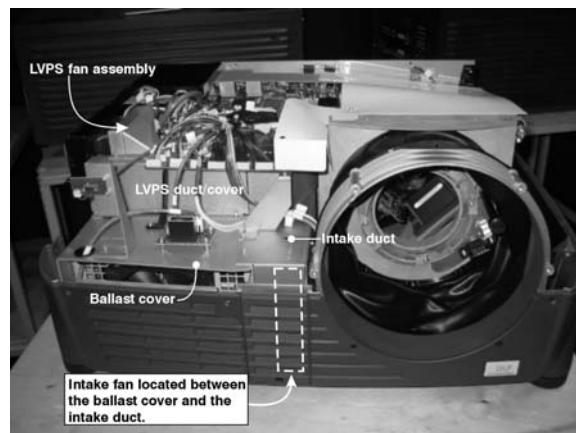


Figure 22. Location of Intake Fan

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the front air filter. This allows you to view the fan through the channel.
3. Remove the Panel Driver PCB. See **TCPD/HDPD** for instructions.
4. Remove the TIPM. See **Card Cage (TIPM)**.
5. Remove the LVPS fan assembly and the LVPS.

NOTE: Do not remove LVPS brackets and cable connections SK5, SK6, 5V, GND, and 3.3V. See **LVPS** for instructions.

6. Remove the LVPS duct/cover.
 - a) Remove the black cable guide through which the blue flex cables are routed to the TCPD/HDPD – two (2) screws. (Figure 23.)
 - b) Remove the five (5) screws securing the duct/cover in place. Make sure the harnessing clipped to the side of the duct is free before removing the duct.

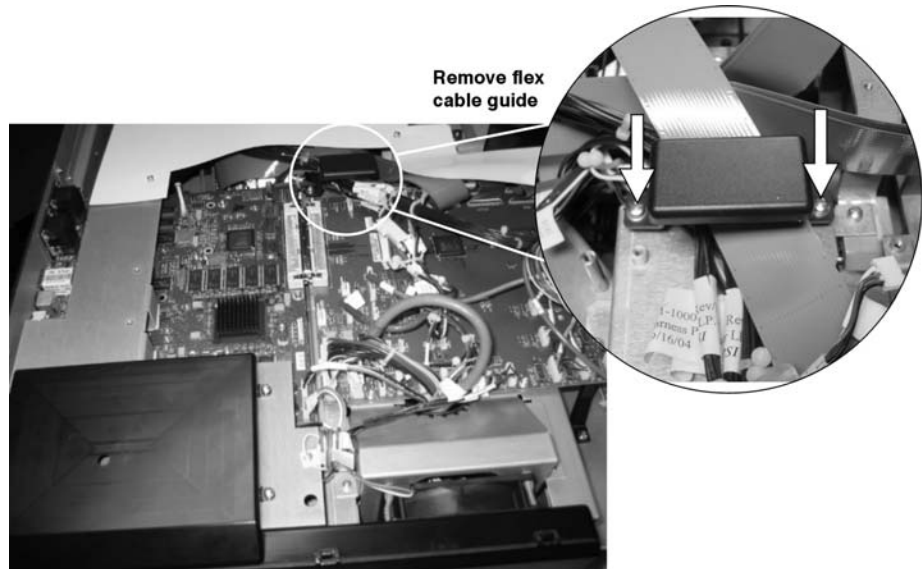


Figure 23. Flex Cable Guide

7. Remove the TCPD/HDPD support arm that is secured on the ballast cover. (Figure 24.)
8. Remove the intake duct by removing the two (2) top screws on the duct and the single screw located near the fan, which is accessible through the small opening at the top. (Figure 24.)

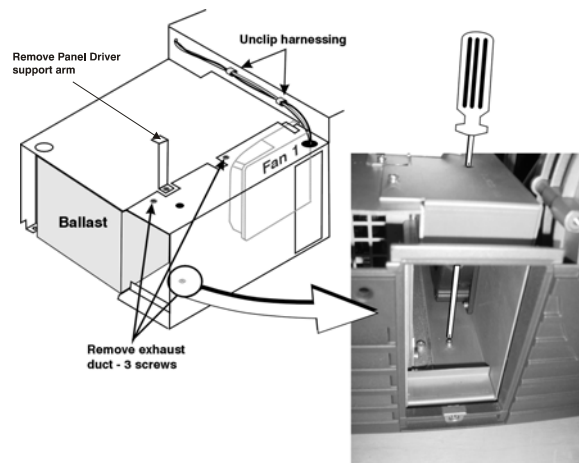


Figure 24. Accessing the Optical Intake Fan

7. Disconnect the AC cable connection from the ballast. The cable can be accessed through the channel between the ballast and the exhaust duct. (Figure 25.)

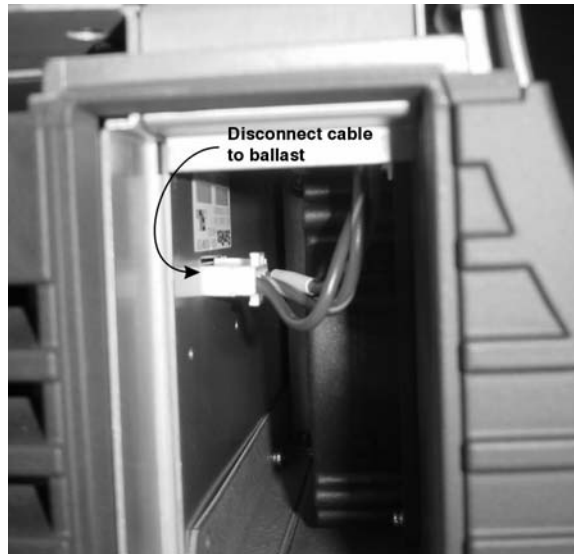


Figure 25. Disconnecting AC Cable from Ballast

8. With the fan disconnected and all other harnessing free, lift the exhaust duct and fan assembly straight up and out of the projector.
9. Flip the exhaust duct over and remove the three (3) screws securing the fan. (Figure 26.)

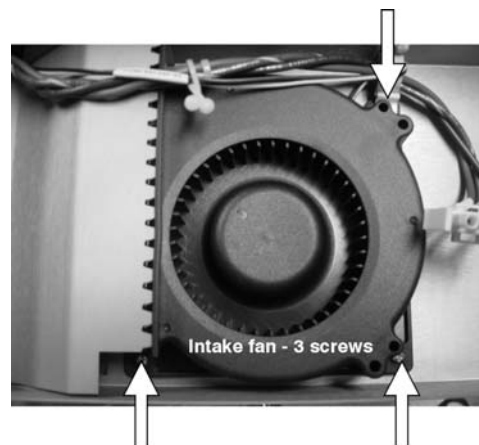


Figure 26. Remove the Optical Intake Fan

When replacing, repeat instructions in reverse making sure to route harnesses back in the same manner. Refer to the Interconnect drawing at the end of this booklet when re-connecting harnesses.

Fans, TIPM (Fan 7 & Fan 8)

(14 minutes)

The TIPM fans are located in the rear left corner of the projector. They are mounted to the underside of the TIPM baffle. To remove and replace:

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the three (3) screws securing the TIPM cover/baffle over the TIPM (Figure 27).
NOTE: Fans 7 and 8 are mounted to the underside.
3. Flip the TIPM cover/baffle over to access the fans underneath.
4. Disconnect Fan #7 (P31) and/or Fan #8 (P34) from the Panel Driver PCB.

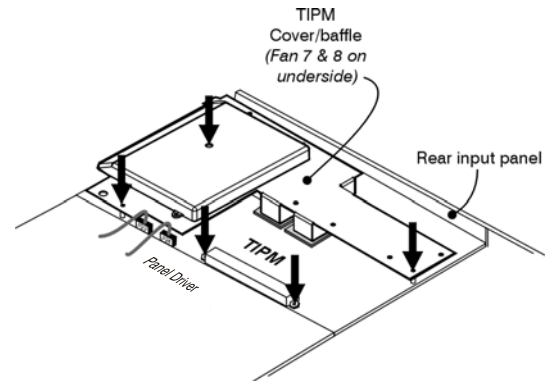


Figure 27. Remove the TIPM Cover

5. Each fan is secured to the TIPM cover/baffle with two (2) screws. Remove the fan you need to replace. (Figure 28.)

When replacing one of these fans, repeat instructions in reverse.

NOTE: Fan 7 and Fan 8 are the same type of fan. They are interchangeable.

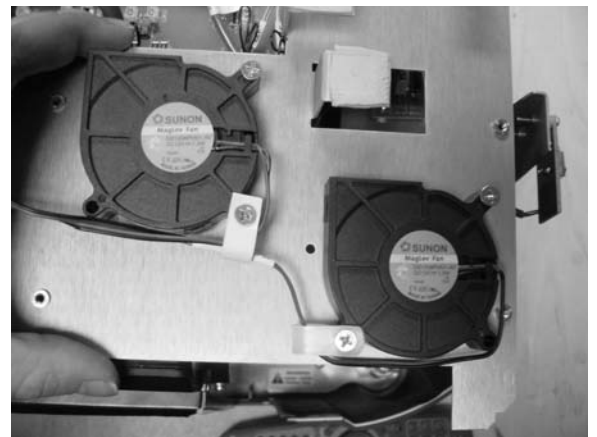


Figure 28. TIPM Fans

Feet

(10 minutes)

There are two (2) adjustable feet on the projector that can be replaced. To remove and replace:

1. Remove the top cover. See **Top Cover** – you do not have to remove the white protective covers located over the electronics. Removing the top cover gives you better access to the feet.
2. Using a slotted, screw driver, remove the C-clip from each leg. (Figure 29.)
3. Unscrew the foot to remove from the projector.

When replacing, repeat instructions in reverse

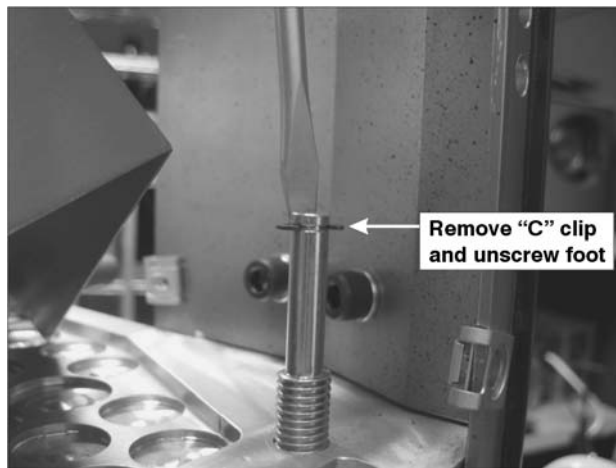


Figure 29. Removing C-Clip from Projector Feet

Flex/LVDS Cables

(5 minutes)

There are three pairs of Formatter/Satellite Board cables (Flex style for SXGA+ or HD2 engines and LVDS for HD engines), which run from the DMDs on the light engine to the TCPD/HDPD. The pair of blue DMD cables is routed through the Black cable bracket on the TCPD/HDPD, while the green and red DMD cables run in between the light engine and lens mount to the TCPD/HDPD. It is recommended that the Flex cables be replaced whenever the light engine is replaced.

To replace any of the Flex cables, do the following:

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the light engine **ONLY** if the Flex cables for the red DMD need to be replaced. (60 minutes)
3. Flip the tab on the connector UP to unlock and disconnect cable. (Figure 30.)

NOTE: The cable ends are routed through a white support bracket at the light engine. Use a small plastic tool to reach in and unlock the connector, then slide the cable out from the bracket.

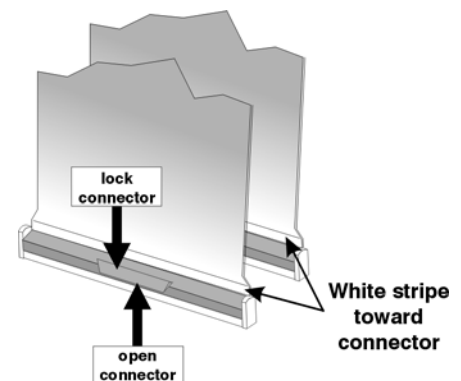


Figure 30. Releasing Cables

When replacing a Flex style cables, insert it into the connector with the white stripe facing the tabbed side of the connector that opens (see Figure 30.) Make sure to re-route the blue DMD cables through the bracket on the TCPD and the red and green cables along the lens mount to the light engine. Allow the cables to loosely loop around components avoiding sharp changes in direction, which could cause the cables to kink.

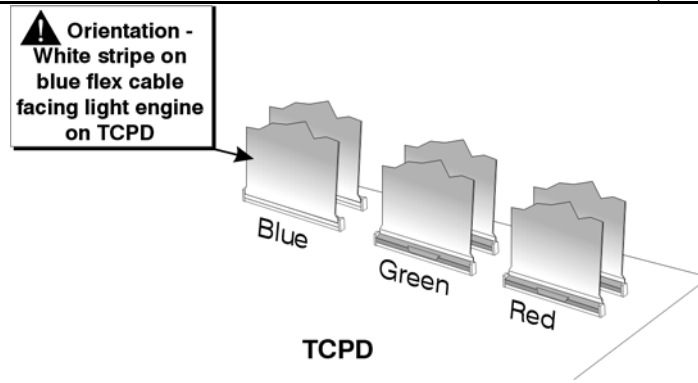


Figure 31. Flex Cable Orientation

To replace any of the LVDS cables, do the following:

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the light engine **ONLY** if the flex cables for the red DMD need to be replaced. (60 minutes)
3. Note the P# and J# at the cable ends.
4. Grasp the entire wire set as close as possible to the LVDS cable connector and pull up gently to disconnect the cables. (Figure 32.)

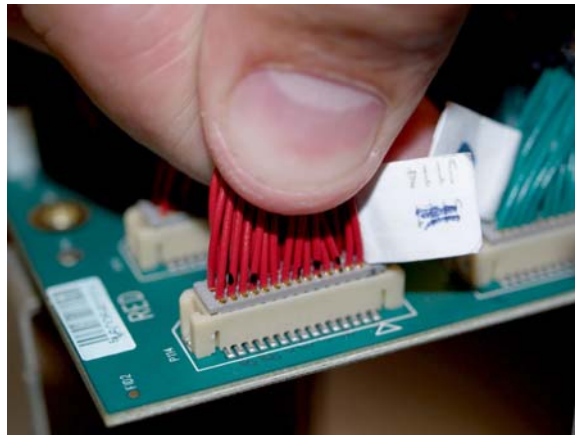


Figure 32. Properly Disconnecting LVDS Cable

When replacing an LVDS style cable, the connector is keyed to permit insertion in only one direction (see Figure 32.) Make sure that you connect the proper cable to the proper connector, i.e., P# matches J#. Make sure to re-route all cables through the bracket on the HDPD. Allow the cables to loosely loop around components avoiding sharp changes in direction, which could cause the cables to kink.

Fold Mirror



Gloves
Required

(30 minutes)

The fold mirror is located behind the lens mount on the right hand side of the projector. It is mounted to the optical tray behind the LiteLOC sensor assembly. To remove and replace:

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the light engine louver.
3. Remove the LiteLOC assembly from the optical mount. See **LiteLOC Assembly** for removal instructions. (Figure 57. and Figure 58.)
4. Remove the lens dust cover (also called the lens bezel), by removing the five (5) screws from the inside of the cover, the two (2) on the bottom cover and the two (2) inside screws. See Figure 52.
5. Remove the four (4) screws securing the fold mirror in place. (Figure 33) **TIP:** Use a short screwdriver, inserted through the opening in the lens mount, when accessing the bottom screws on the fold mirror.

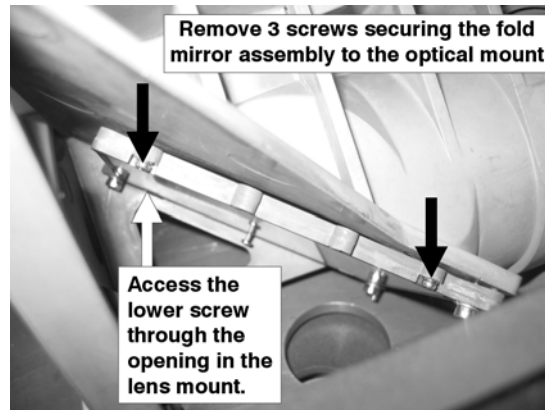


Figure 33. Removing the Fold Mirror

When replacing the fold mirror, repeat instructions in reverse. Make sure to mount the fold mirror with the **closest reflective side facing in** toward the optical mount. To determine which the closest reflective side is, place the tip of a pen to the mirror face and look for a gap between it and the reflection. NO GAP indicates the closest reflective side.

Integrator Rod Assembly

(20 minutes)



**Gloves
Required**

The integrator rod assembly is located inside the optics tray, which is next to the lamp compartment. To remove and replace:



WARNING

Always wear clean, lint-free gloves when handling the integrator assembly, otherwise damage can occur.



WARNING

Only handle the Cast aluminum part of the Integrator Rod to avoid damage to the part.

To remove and replace:

1. Remove the top cover. See **Top Cover** on Page 9 for instructions.
2. Remove the rear air filter (four - #1 Philips screws – two top/two bottom) as shown in Figure 33.

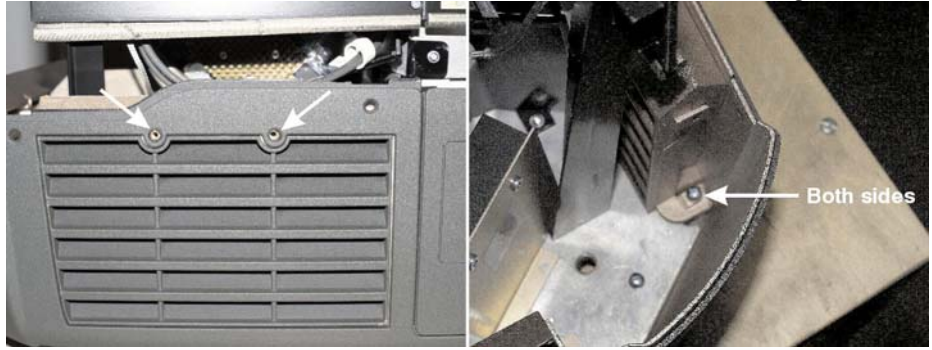


Figure 34. Remove Rear Air Filter

3. Remove the lamp. Refer to **Lamp Replacement** for instructions and important safety and warning guidelines.



Figure 35. Remove Lamp

4. Remove the cold mirror heat sink (2 - #2 Phillips screws) as shown in Figure 36.
5. Remove the contrast aperture cover located between the cold mirror heat sink and contrast aperture motor assembly (2 - #1 Phillips screws). See Figure 36.

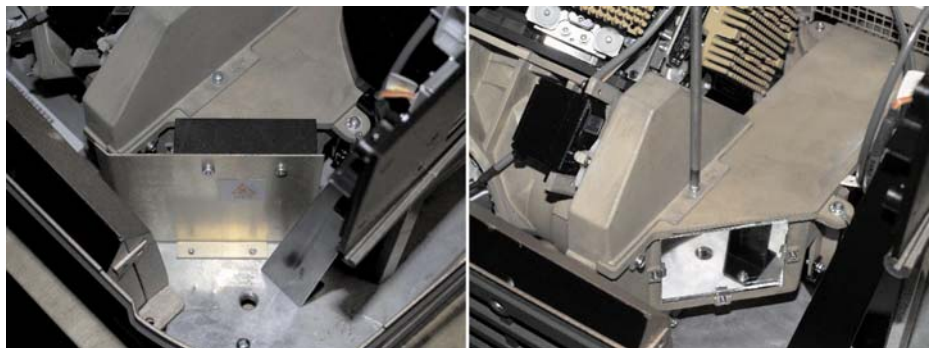


Figure 36. Remove Cold Mirror Heatsink and Aperture Cover

6. Remove the three (3) - #1 Phillips screws securing the black exhaust duct, which is located just above the lamp compartment (Figure 37.). Remove the duct from the projector.

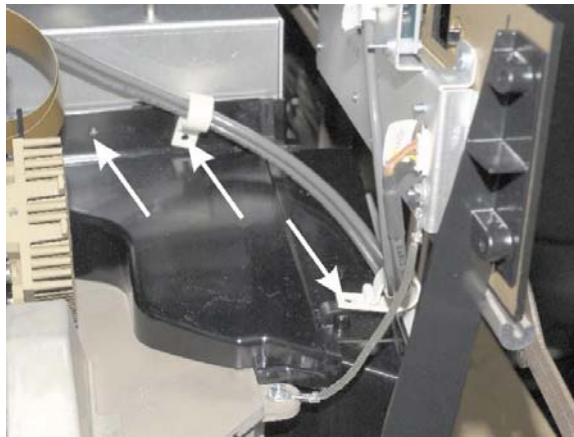


Figure 37. Remove Exhaust Duct

7. Remove the green DMD fan (in 1000W and 1200W models) – four (4) - #1 Phillips screws. See *Fans, Green DMD*.
8. Remove the lamp louver, located on the right side of the projector by the optics tray (four screws).
9. Remove the four (4) - #1 Phillips screws retaining the integrator cover (Figure 38.) and then remove the cover.

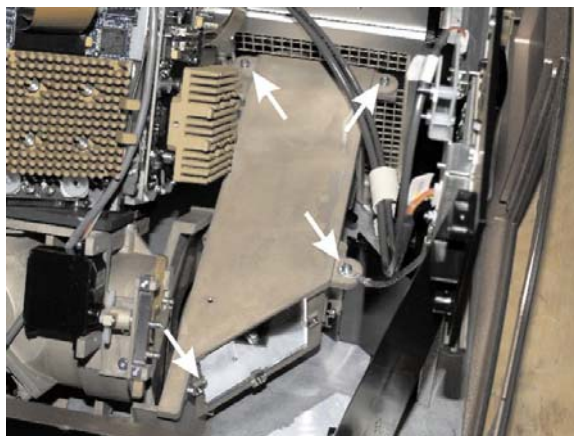


Figure 38. Remove Integrator Rod Cover

10. Unscrew and remove the thumbwheel/standoff retaining nut and spring clip using a 7/32" socket (Figure 39.)



Figure 39. Remove Thumbwheel/Standoff



11. Wearing clean gloves, remove the integrator assembly (integrator and holder) as shown on Figure 40.

NOTE: Pay particular attention to avoid any contact with the glass rod itself.



Figure 40. Remove Integrator Rod Assembly

To replace the integrator rod assembly:



WARNING

Integrator alignment must be performed by qualified service technicians.



1. Air clean the integrator rod assembly before placing it in the optics tray.
 2. Carefully lower the integrator assembly into the optics tray with the polished end of the integrator towards the UV filter (end closest to the lamp compartment (Figure 40.))
- NOTE:** the threaded shaft of the assembly should fit into the small slot on the optics tray.
3. Place the spring clip and standoff over the threaded shaft, but do not tighten.
 4. Air clean the integrator rod assembly again.
 5. Replace the optics cover on the tray, the green DMD fan, the contrast aperture cover and the black exhaust duct – do not install the lamp louver or the top cover. Make sure the DMD fan is connected to the Panel Driver PCB.

Use appropriate precautions while projector is powered on during alignment.

To align the integrator:

1. Power on the projector and display a white field test pattern.
2. Adjust the integrator by moving the thumb wheel/standoff up or down (see Figure 40.) until it fills the DMD and all corners of the displayed image are filled in (no shadowing) as shown in Figure 41.

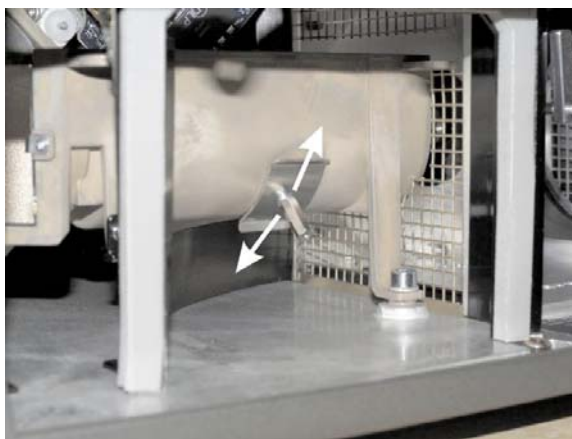


Figure 41. Adjust Integrator Rod (A)

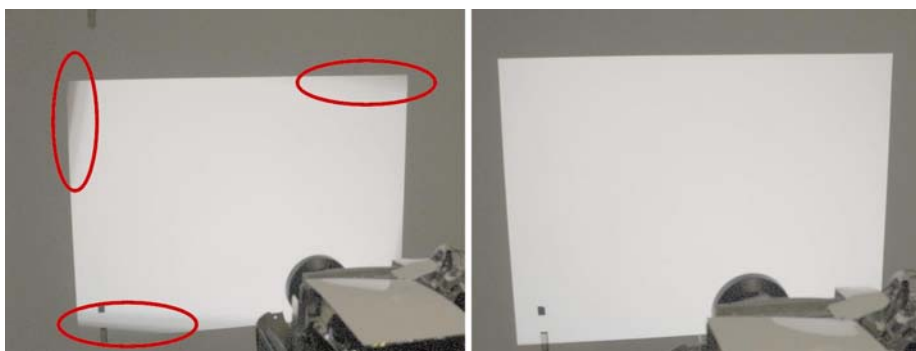


Figure 42. Adjust Integrator Rod (B, SX+ pixels shown)

3. When the integrator is successfully aligned, tighten the thumb wheel/standoff to a **torque setting of 2 in-lb** to “lock” it in place.
4. Adjust the set screws on the fold mirror using a hex driver to remove any remaining shadows along the edges. (Figure 43).



Figure 43. Adjust Fold Mirror Set Screws

5. Verify the White Field Test Pattern for any blemishes. If blemishes exist, you will have to restart the entire process with a new Integrator Rod Assembly.

- Once you are satisfied with the output, power the projector down and replace the lamp louver and top cover.

Integrator Thumb Wheel/Standoff ►

Projectors manufactured after August 2005 use a standoff in place of the thumb wheel. If the thumb wheel requires replacement, replace it with the standoff and spring clip provided in the service kit. **Tighten the standoff to 2 in-lb** when replacing, using an angled torque driver.

IR Sensor (Dual)

Front IR ► (9 minutes)

The front IR sensor is located in the front, left hand corner of the projector. To remove and replace:

- Remove the top cover. See **Top Cover** for instructions.
- Disconnect the harness from the front IR sensor (connects to the Panel Driver at P38).
- Remove the screws and standoffs from the PCB – two (2) screws. (Figure 44.)
- Remove the sensor.

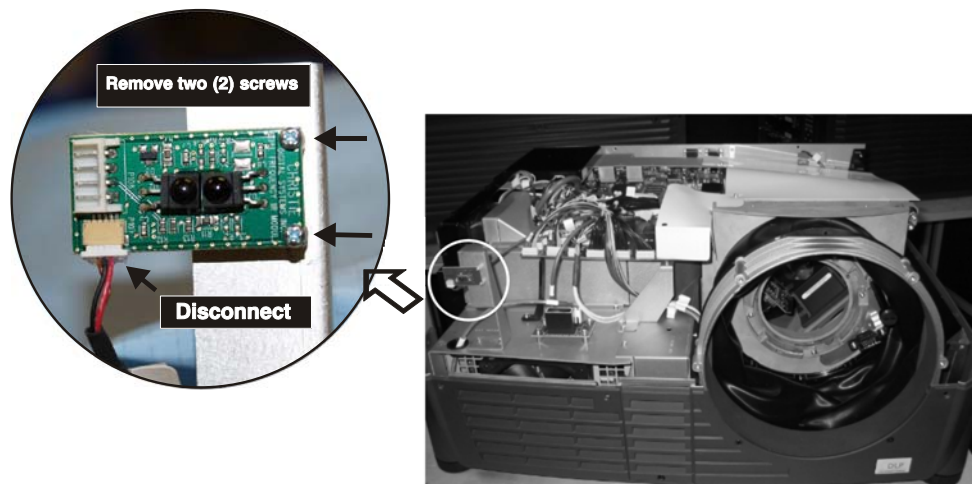


Figure 44. Remove the Front IR Sensor

Rear IR ► (15 minutes)

The rear IR sensor is located in the rear, top left hand corner of the projector. To remove and replace:

- Remove the top cover. See **Top Cover** for instructions.
- Remove the rear, built-in keypad plate – eight (8) screws.
- Disconnect the harness from the rear IR sensor (connects to P35 on the TCPD/HDPD).
- Remove the two (2) screws securing the PCB in place. (Figure 45.)
- Remove the sensor.

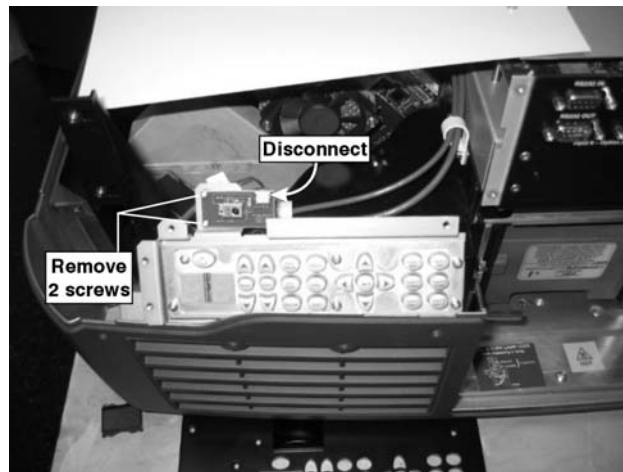


Figure 45. Remove the Rear IR Sensor

Lamp



**Gloves
Required**

Use only the Christie approved *Lamp and Filter Kit* for your specific projector model.




WARNING

Handle lamp with care.

High-pressure lamp may explode if not handled properly or dropped. Wear protective clothing and safety goggles when handling lamps.

Use only Christie approved lamps provided in the Lamp and Filter Service Kits for your projector.

1. Press  to power down the projector. Wait at least five (5) minutes to allow the internal cooling fans to stop before unplugging the projector. This wait period is also required to allow the lamp to sufficiently cool before handling.



WARNING

Always power down and unplug the projector prior to servicing.

Allow the lamp to cool before handling.

2. Using a screwdriver, loosen the two (2) screws from the lamp door located at the back of the projector just below the input panel. (Figure 46.)

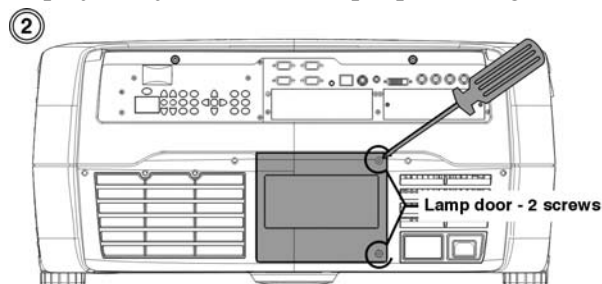


Figure 46. Remove Lamp Door

3. Pull (out) and turn the lamp lock lever a quarter turn counter clockwise to the “unlock” position. (Figure 47.)

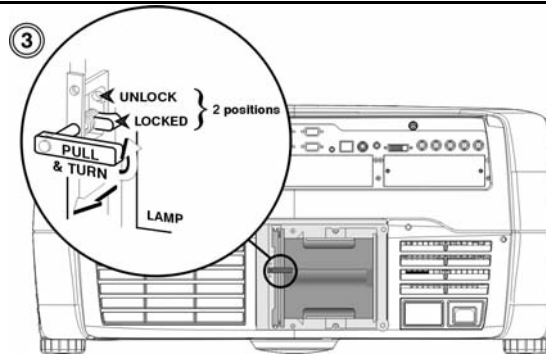


Figure 47. Pull and Turn Lock Lever

4. Grasp the lamp by its housing only and pull it straight out (lamp slides along guides) until it's free. (Figure 48.) Discard the lamp using safe disposal/recycling practices or contact Christie for a possible re-lamping program.



WARNING

Wear protective gloves when removing lamp.

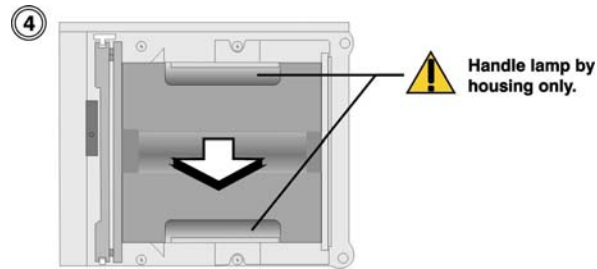


Figure 48. Lamp Handles

5. Align the new lamp with the top and bottom guides on the left side of the lamp compartment. (Figure 49.) Slide the lamp all the way in – a slightly harder push may be required right at the end to make sure it is fully seated into the terminal block.

NOTE: The projector will not power up again if the lamp is not fully connected to the terminal block.

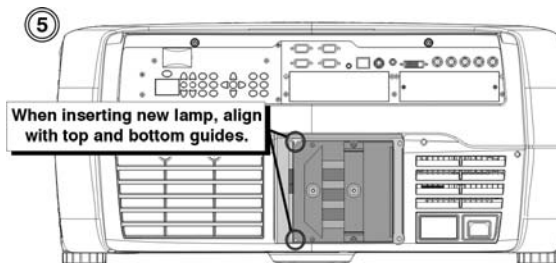



Figure 49. Aligning Lamp with Guides

6. Pull (out) and turn the lamp lock lever (turned up in Step 3) a quarter turn clockwise to “lock” the lamp in place.

NOTE: If you can't turn the lamp lock into position it is likely the lamp is not fully inserted. In this case, partially remove the lamp and try pushing it back in again. Then, try switching the lock lever to the “lock” position.

7. Replace the lamp door and tighten the two (2) screws to secure.


8. The next time the projector is powered up, enter the serial number of the newly installed lamp. Access the Lamp menu and select "Change Lamp". Enter the serial number in the Lamp S/N text box using the number text entry keys.

 *It is strongly recommended the projectors two air filters are replaced at the same time a lamp is replaced, if not sooner. Refer to the instructions provided in this booklet – see Air Filters.*

Lamp Ballast

(63 minutes)

The lamp ballast is located on the left hand side of the projector. It is mounted directly to the base of the projector.

 The ballast is a critical component of the projector and varies between models - make sure to use the lamp ballast specific for your projector model.

To remove and replace:

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the lamp. See **Lamp** for instructions.
3. Remove the front air filter. See **Air Filter – Front** for instructions.
4. Remove the TCPD/HDPD PCB. See **Three-Chip Panel Driver (TCPD)/High Definition Panel Driver (HDPD)**.
5. Remove the TIPM card cage. See **Card Cage (TIPM)**.
6. Remove the low voltage power supply (LVPS) only. Leave the LVPS bracket and all cable connections intact.
7. Remove the LVPS duct/cover.
 - a) Remove the black cable guide through which the blue DMD flex cables are routed – two (2) screws. (Figure 23.)
 - b) Remove the five (5) screws securing the duct/cover in place. Make sure the harnessing clipped to the side of the duct is free before removing the duct.
8. Remove the light shield.
 - a) Remove three (3) screws securing the black exhaust duct near the lamp door. (Figure 19.)
 - b) Remove two (2) screws securing the light shield to the bottom base plate.
9. Remove the four (4) screws securing the two (2) high voltage lead holders.
10. Remove the four (4) screws securing the lamp ballast to the base.
11. Remove the two (2) screws securing the ballast cover to the base.
12. Slightly raise the rear of the lamp ballast to access and remove the single screw securing the ground lead and clamp.
13. Remove the ballast's two (2) mounting brackets for use on the new ballast (two screws each). (Figure 50.)
14. Remove the four (4) screws securing the ballast top cover.
15. Disconnect the ballast cable connection (J60). Route cable through the grommet in the ballast cover to free. (Figure 50.)

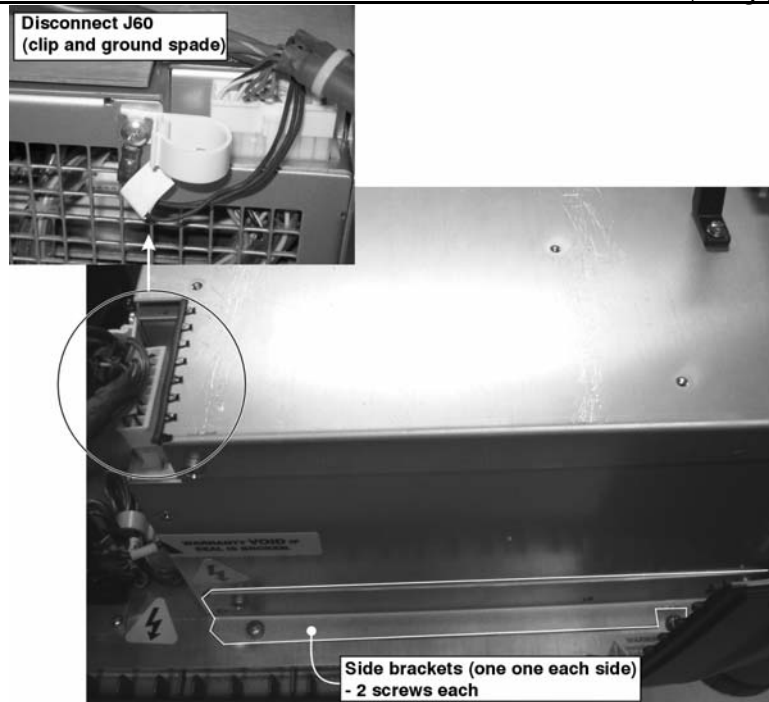


Figure 50. Disconnect Ballast Cable Connection

16. Remove the lamp ballast.

When replacing the ballast, make sure to reuse the two side brackets from the old ballast on the new ballast. (Connect the anode lead to the lamp holder closest to the ballast and the cathode lead to the lamp holder furthest from the ballast.)

Lamp Contact PCB


(10 minutes)

For HD models only

The lamp contact PCB is located in the lamp compartment and is accessible by first removing the lamp.

To remove and replace:

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the lamp. See **Lamp** for instructions and safety guidelines.
3. Look into the lamp compartment and locate the small lamp contact PCB.
4. Remove the two (2) screws securing the PCB. As you slowly pull it forward you will notice the harness (connects to J120 on the HDPD). Disconnect the harness from the PCB and remove.

 Avoid disconnecting the harness from the HDPD as it will be difficult to reconnect without having to disassemble the projector further.

When replacing, install the PCB in the correct orientation so the lamp memory PCB on the lamp can connect to it when the lamp is inserted.

Lamp Interlock Switch

(12 minutes)

The lamp interlock is located to the right of the lamp door and is mounted to the projector's base plate. To remove and replace:

1. Remove the top cover. See *Top Cover* for instructions.
2. Loosen the two (2) captive screws securing the lamp door.
3. Remove the two (2) screws securing the lamp interlock assembly to the base. (Figure 51.) Remove the assembly.
4. Flip the assembly over and remove the two (2) screws securing the switch to its housing.
5. Disconnect cables (needle nosed pliers may be required).

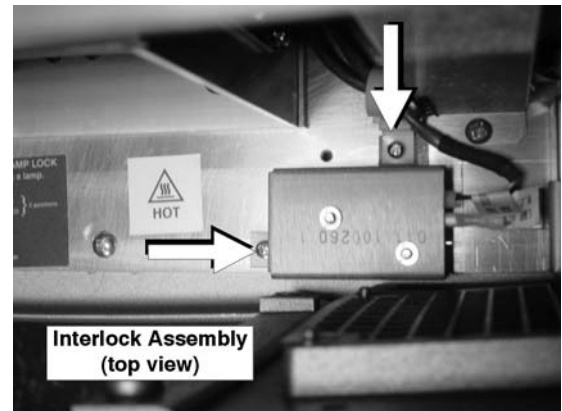


Figure 51. Remove Lamp Interlock Switch

Lens Mount

(23 minutes)

The lens mount is located directly behind the lens near the front of the projector. It is a motorized component in all models. In most cases, the lens mount will require adjustment (called bore-sight alignment) to ensure the displayed image is optimally focused in all four corners and in the center.

1. Remove the projection lens, if installed. See *Projection Lens*.
2. Remove the top cover. See *Top Cover* for instructions.
3. Remove the lens dust cover (also called the lens bezel) by removing nine (9) screws. Seven (7) are located along the inner rim where the cover meets the lens mount and the other two (2) are located on the bottom cover. (Figure 52.)

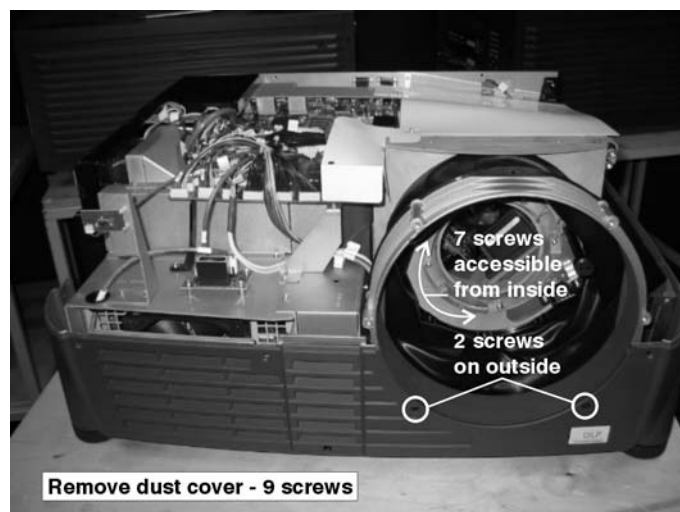


Figure 52. Remove Lens Dust Cover

4. Disconnect all the cable connections from the front edge of the TCPD/HDPD.
(Figure 53.)
NOTE: Leave the harnesses for horizontal and vertical offset connected – J19, J20.
5. Undo the cable clip used to cleanly route harnesses to the TCPD/HDPD from the angled bracket next to the lens mount. (Figure 53.)

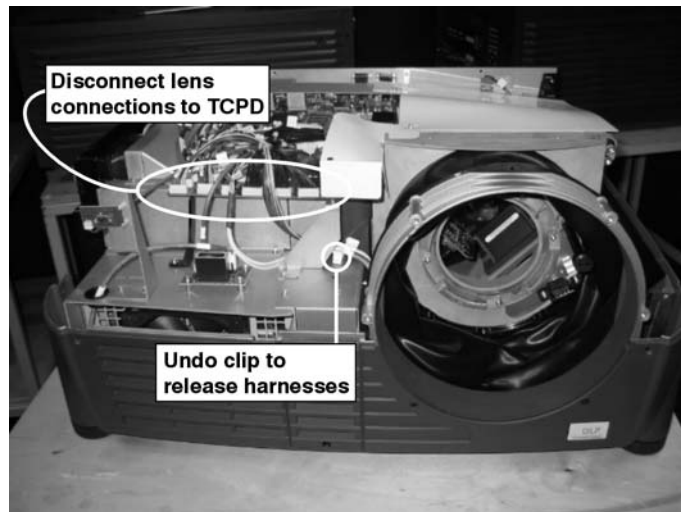


Figure 53. Disconnect Lens Cables from TCPD

6. Remove the four (4) screws securing the lens mount to the light engine chassis.

NOTES: 1) There are two (2) sets of top screws and two (2) sets of bottom screws. It is important to only remove the outside four (4) screws (shown as "A" in Figure 54.). Three (3) of these screws are paired with springs at the back. Grab hold of the loose spring before you remove the screw so it doesn't fall into the projector. 2) The four (4) inner set of screws are dedicated for bore-sight alignment adjustments.

IMPORTANT! If you intend to install the same lens mount back into the projector do not adjust these inner four (4) screws. If these screws are adjusted in any way, bore-sight alignment will be off and you will have to re-adjust.

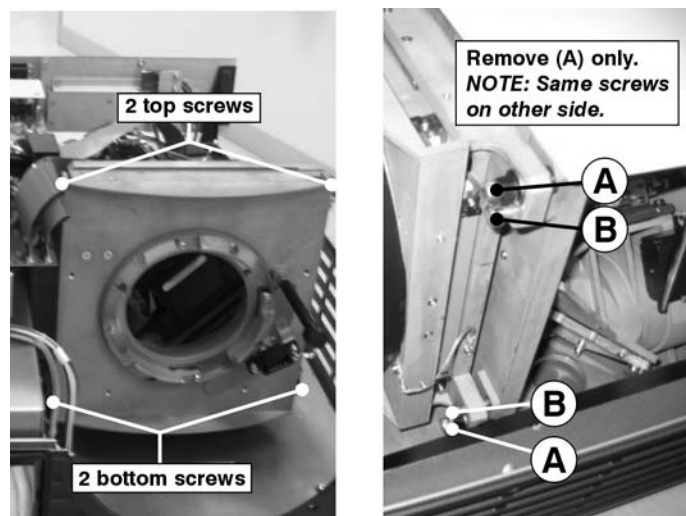


Figure 54. Remove the Lens Mount

7. Carefully, remove the lens mount from the front of the projector and at the same time, feed the lens mount harnesses through the bottom left corner of the lens mount.

When replacing the lens mount, perform steps in reverse. It is important to route the harnesses back through the opening in the bottom left corner of the lens mount.

If installing a new lens mount, Lens Bore-sight Alignment will be required. Refer to the separate instruction sheet provided in the Lens Mount service kit.

Light Engine




Gloves
Required

(42 minutes)

The light engine is on the right hand side of the projector, behind the lens mount. It is mounted to the optical mount. To safely remove the light engine, the entire optical assembly (optical mount and light engine) must first be removed and then separated.

1. Remove the top cover. See **Top Cover** for instructions.
2. Remove the TIPM card cage. See **Card Cage (TIPM)**.
3. Remove the black exhaust duct secured to the light shield (three screws). See Figure 19.
4. Disconnect the cables from the TCPD/HDPD. Then route the blue DMD flex/LVDS cable through the small bracket on the board.

 **IMPORTANT – Do not pull** on the flex cables when disconnecting to prevent damage. Unlock the flex cable connector first (flip tab down) before removing the cable. See **Flex/LVDS Cables**.

5. Disconnect the shutter, DMD fans (not on 500W models), DMD power cables, the LiteLOC sensor and the contrast aperture from the Panel Driver PCB. (Figure 23.)
6. Remove the lens dust cover (also called the lens bezel), by removing seven (7) screws accessible from the inside and the two (2) screws located on the bottom cover. (Figure 52.)
7. Disconnect all the lens cable connections from the front edge of the TCPD/HDPD (Figure 53.) Unclip them from the wire clip so they are free to remove when the optical assembly is removed in the next step.
8. Remove the optical assembly (includes optical mount and light engine) from the projector by removing the following five (5) screws (Figure 55.):
 - Two (2) screws located on the fold mirror side (#1 & 2)
 - One (1) screw located behind the red DMD (#4)

NOTE: Requires a long screwdriver to access.

 - One (1) screw located on the side closest to the lamp compartment (#3)
 - One (1) screw securing the optical mount to the TCPD/HDPD mounting frame (#5)

Lift the optical assembly out of the projector and set it aside in a clean area for further disassembly.

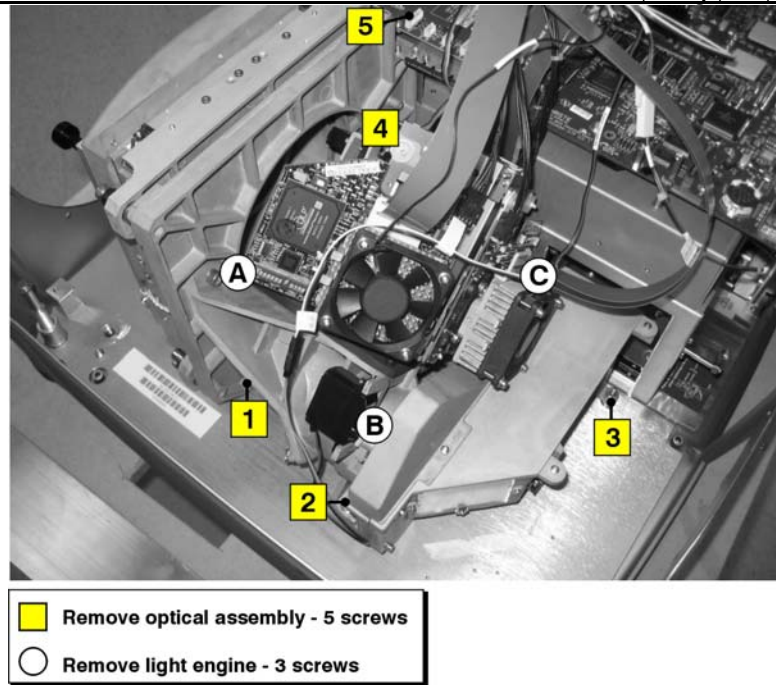


Figure 55. Remove Optical Assembly

9. Separate the light engine from the optical mount by removing the three (3) screws identified by circles in Figure 55.

⚠ Handle the light engine by its bottom metal plate and one of the heat sinks. **DO NOT** touch any of the boards when removing to prevent damage. See Figure 56.

⚠ WARNING
Handle the light engine by its bottom metal plate and heatsink only.
Do not touch the boards.

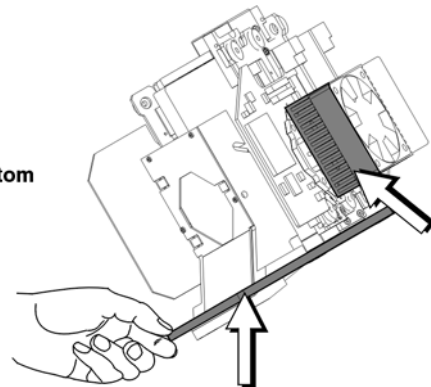


Figure 56. Remove Light Engine

When replacing, repeat instructions in reverse. When connecting the cables make sure to route the blue cables back through the bracket on the TCPD/HDPD and the red and green cables along the lens mount side. Refer to ***Flex/LVDS Cables*** for more details.

NOTE: It is recommended you replace the Flex cables in your projector if you are replacing the light engine with a new one

LiteLOC Assembly**(9 minutes)**

The LiteLOC assembly is located on the right hand side of the projector, behind the lens mount. It is mounted to the optical mount just in front of the fold mirror. To remove and replace:

1. Remove the top cover. See **Top Cover** for instructions.
2. Disconnect the LiteLOC assembly harness. (Figure 57.)
3. Remove the top two (2) screws securing the LiteLOC assembly to the optical mount and then loosen the bottom center screw. (Figure 57.) Remove for further disassembly.
4. If you want to replace the PCB only, remove the two (2) screws securing it to the housing. (Figure 58.)

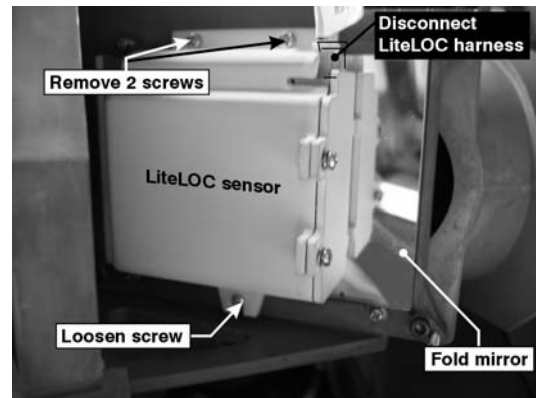


Figure 57. Remove LiteLOC Assembly

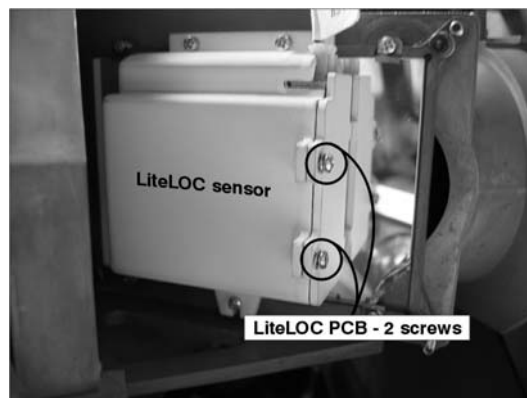


Figure 58. Remove LiteLOC PCB

Low Voltage Power Supply (LVPS)**(19 minutes)**

The LVPS (Low Voltage Power Supply) is located below the Three-Chip Panel Driver (TCPD)/High Definition Panel Driver (HDPD) and Ten-Bit Image Processing Module (TIPM). To remove and replace the LVPS:

1. Remove the top cover. See **Top Cover** for instructions.
2. Disconnect harness connectors J36 and J52 from the TCPD/HDPD.
3. Remove the large, side plastic air duct that contains the main filter – three (3) screws.
4. Remove the two (2) screws securing the LVPS cooling fan bracket. Lift the assembly out and set it aside on top of the unit. (Figure 59.)

5. Remove the two (2) screws securing the LVPS assembly to the chassis.

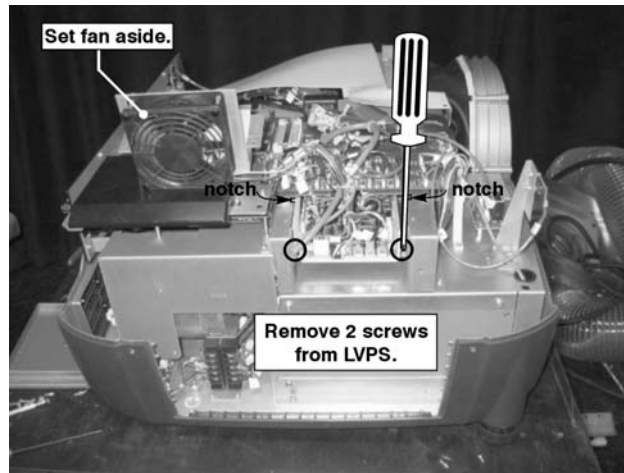


Figure 59. Remove LVPS Cooling Fan Bracket

6. Carefully, slide out the LVPS just enough to access the harness connection at the back. Disconnect the AC cable connection. (Figure 60.)

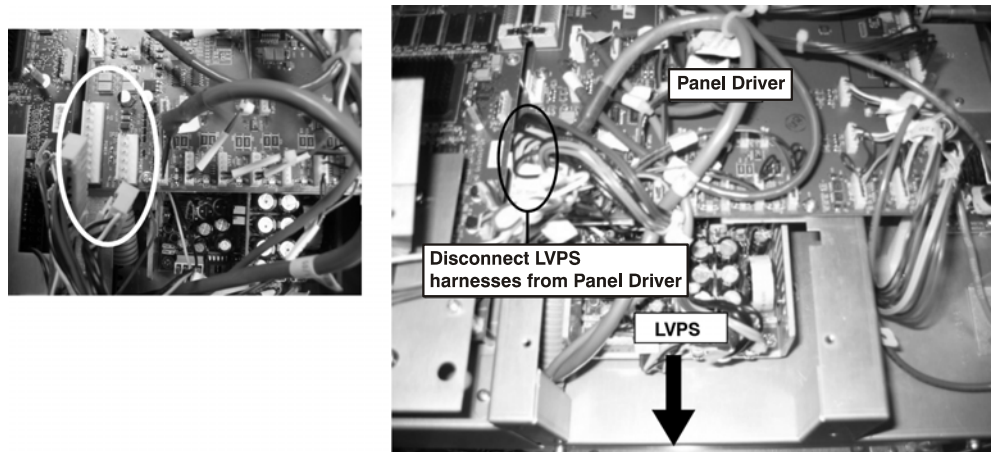


Figure 60. Disconnect LVPS Cables

7. Remove the brackets secured to the LVPS – four (4) screws.
8. Remove the cable connection SK5, SK6, and the three (3) DC voltage connections.
9. Remove the LVPS. (Figure 61.)

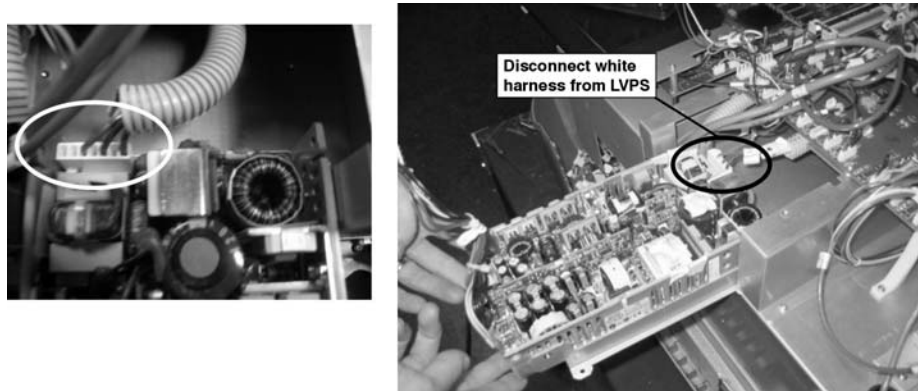


Figure 61. Remove LVPS

When replacing, slide the LVPS under the plate at the back of the LVPS compartment (Figure 62.), while routing the grey tubing along the side of the module (Figure 63.). Make sure none of the harnesses from the TCPD/HDPD get pinched when inserting the LVPS.

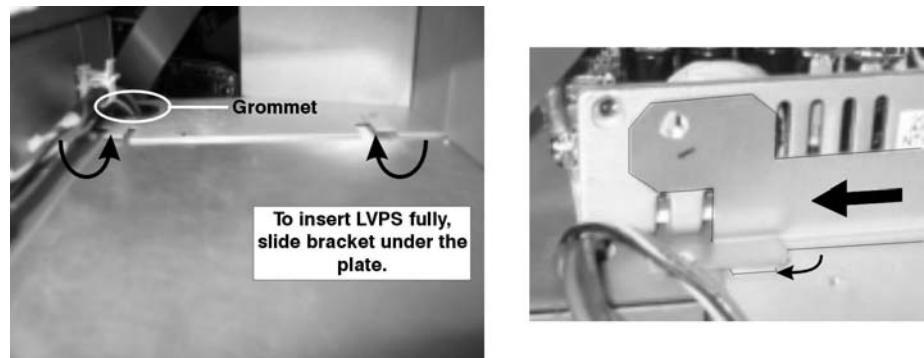


Figure 62. LVPS Compartment Back Plate

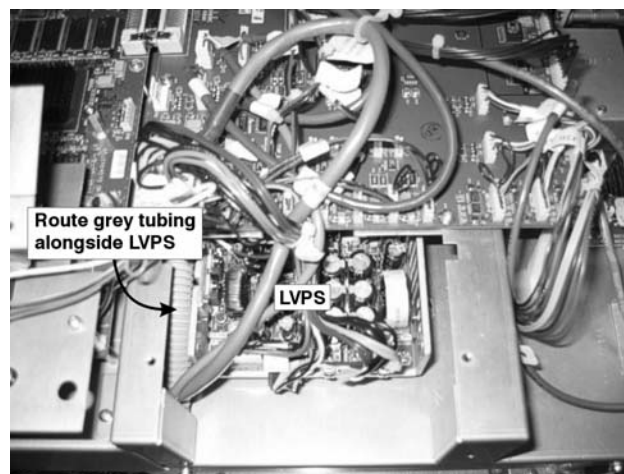


Figure 63. Inserting the LVPS

Main AC Line Filter

(12 minutes)

The line filter is located next to the interlock assembly at the back of the projector and is mounted to the bottom chassis. To remove and replace:

1. Remove the top cover. See **Top Cover** for instructions.
2. Disconnect the three (3) main connections with needle nose pliers.
3. Remove the two (2) screws securing the line filter to the bottom chassis. (Figure 64.)
4. Remove the line filter assembly. Then separate the line filter from its housing (two screws).

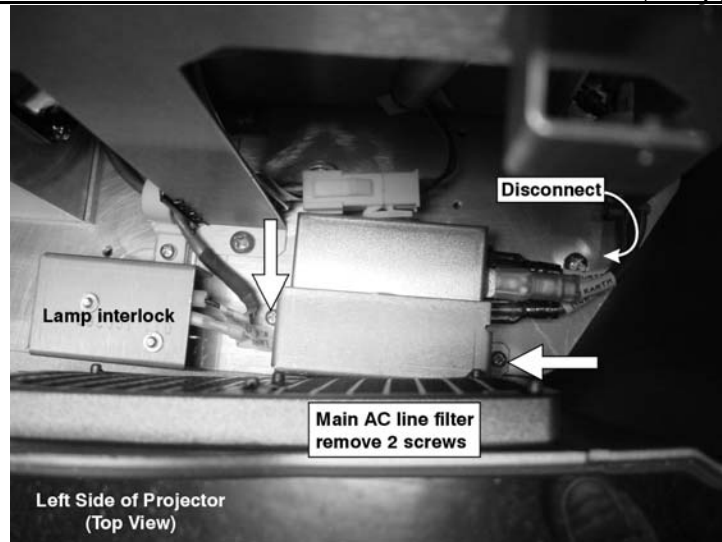


Figure 64. AC Line Filter

Replace a new line filter using the same instructions in reverse.

Optional Input Modules

(5 minutes)

Optional input modules, if installed, are located at Input 5 or Input 6 on the projector's input panel. To remove and replace:

1. Remove the two (2) screws from the optional module faceplate.
2. Grasping the module, pull it straight out of the projector.

Projection Lens

(5 minutes)

1. Place a lens cap over the end of the lens to protect it from being damaged.
2. Press and hold the "lens release" button located in the top right corner of the lens panel. Grasping the lens barrel, turn it in a counter-clockwise direction until it stops. Then pull it forward to remove it (disconnects from the connector assembly).

When installing a projection lens, slide the new lens into the lens opening and at the same time align the connector that is located on the side of the lens with the connector assembly on the lens retaining ring. As the lens connects, re-align it slightly until the tabs on the lens fit into the slots in the lens retaining ring. With the lens fully inserted (and connected) turn it clockwise until the lens release button "pops" indicating the lens is fully inserted.

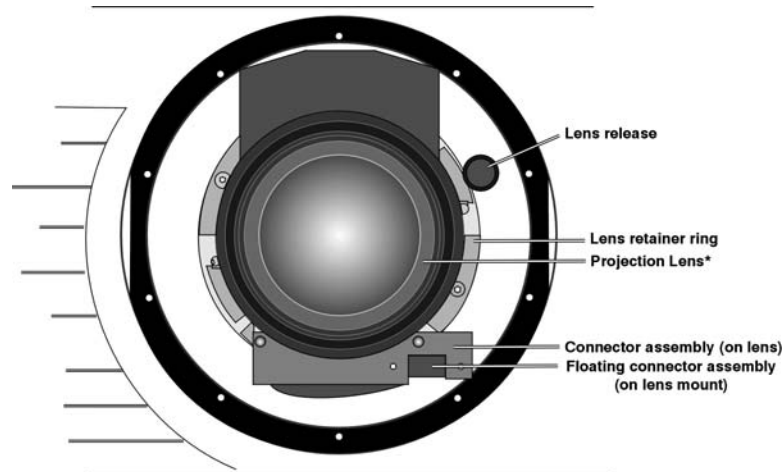


Figure 65. Projection Lens Components

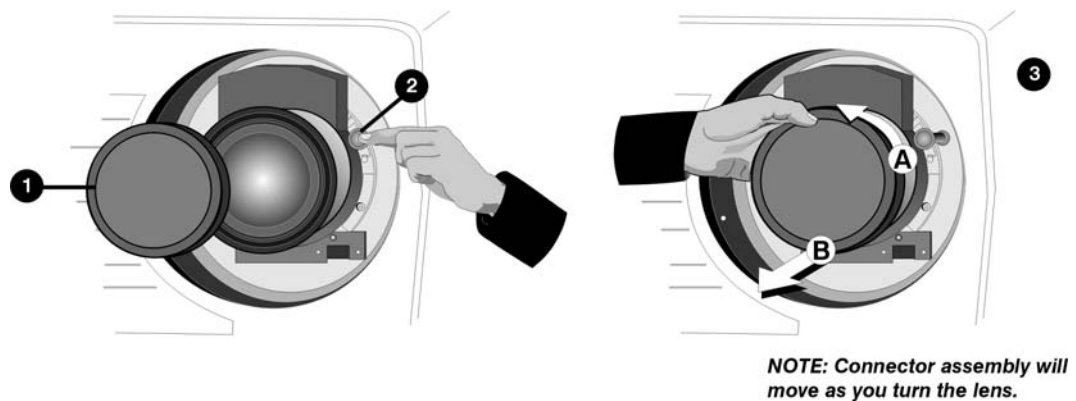


Figure 66. Remove the Projection Lens

Shutter Assembly

(15 minutes)

The shutter is located between the light engine and the lens. To remove and replace:

1. Remove the projection lens. See *Projection Lens* for instructions.
2. Remove the top cover. See *Top Cover*.
3. Disconnect the harness to the shutter by loosening the two cable clamps. Then free the harness.
4. Remove the two (2) screws securing the shutter assembly (shutter bracket and shutter) to the light engine. Pass the assembly through the opening in the lens bezel to remove. (Figure 67.)

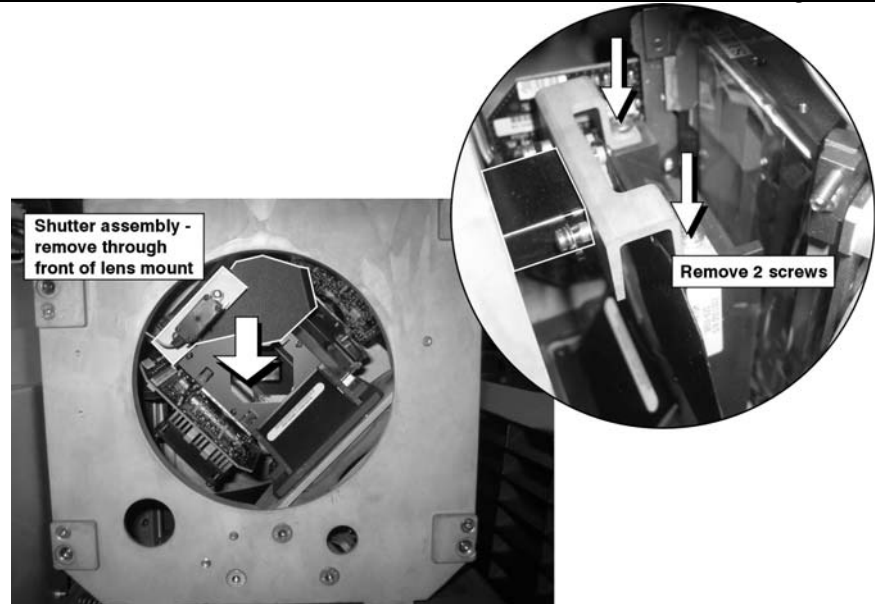


Figure 67. Remove Shutter Assembly

5. Remove the two (2) screws securing the shutter assembly to the mounting bracket. (Figure 68.)

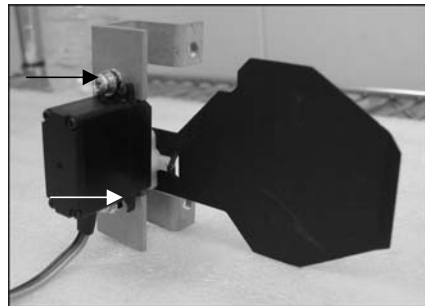


Figure 68. Separate Shutter from Mounting Bracket

When replacing the shutter, repeat instructions in reverse.

Ten-Bit Image Processing Module (TIPM)

(20 minutes)

1. Remove the TIPM card cage. See *Card Cage (TIPM)* for removal instructions.
2. Remove the faceplates from optional inputs. (Figure 69.)
3. Remove the hardware from all connectors on the input panel.
4. Remove four (4) screws from the input panel used to secure the card guides.
5. Remove the DSBP to free the TIPM. See *Dual Slot Backplane Module (DSBP)*.

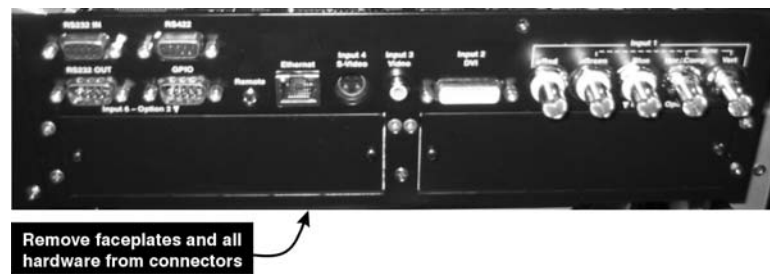


Figure 69. Projector Input Panel

Three Chip Panel Driver (TCPD)/High Definition Panel Driver (HDPD)

(19 minutes)

The TCPD/HDPD is located at the top of the projector (front) and is connected to the TIPM module. It is the module where most harness connections are made. To remove and replace:

1. Remove the top cover. See *Top Cover* for instructions.
2. Disconnect all cable connections to the TCPD/HDPD.
3. Remove the six (6) screws securing the TCPD/HDPD, then carefully pull and lift the board to the front of the projector to remove.

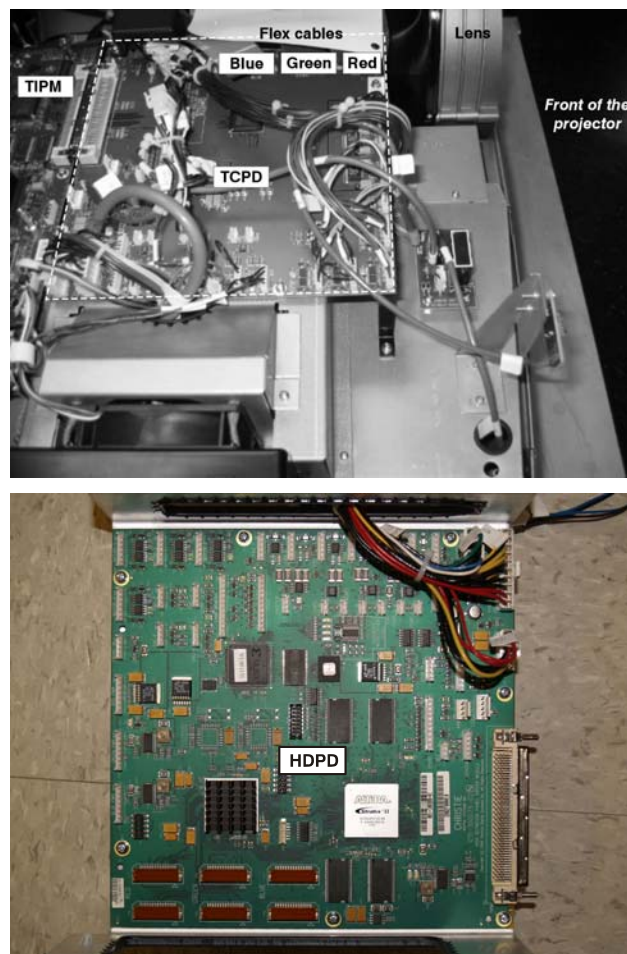


Figure 70. Panel Driver Cable Connections

NOTE: The appearance and cable connections of your projector may differ slightly from those in Figure 70.

When replacing the TCPD/HDPD, use the appropriate *Interconnections* drawing for your projector model to correctly reconnect harnesses. See Pages 51 or 52.

UV Filter



(5 minutes)

The UV filter is located and mounted to the end of the optical tray. It is accessible through the lamp compartment. To remove and replace:

1. Remove the lamp. See **Lamp Replacement**.
2. Looking into the lamp compartment, locate the UV filter on the left hand side. It is mounted to the optical tray with three (3) screws. Remove the screws and the filter. (Figure 71.)

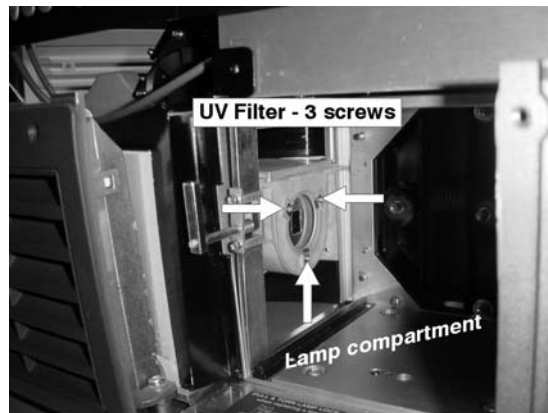


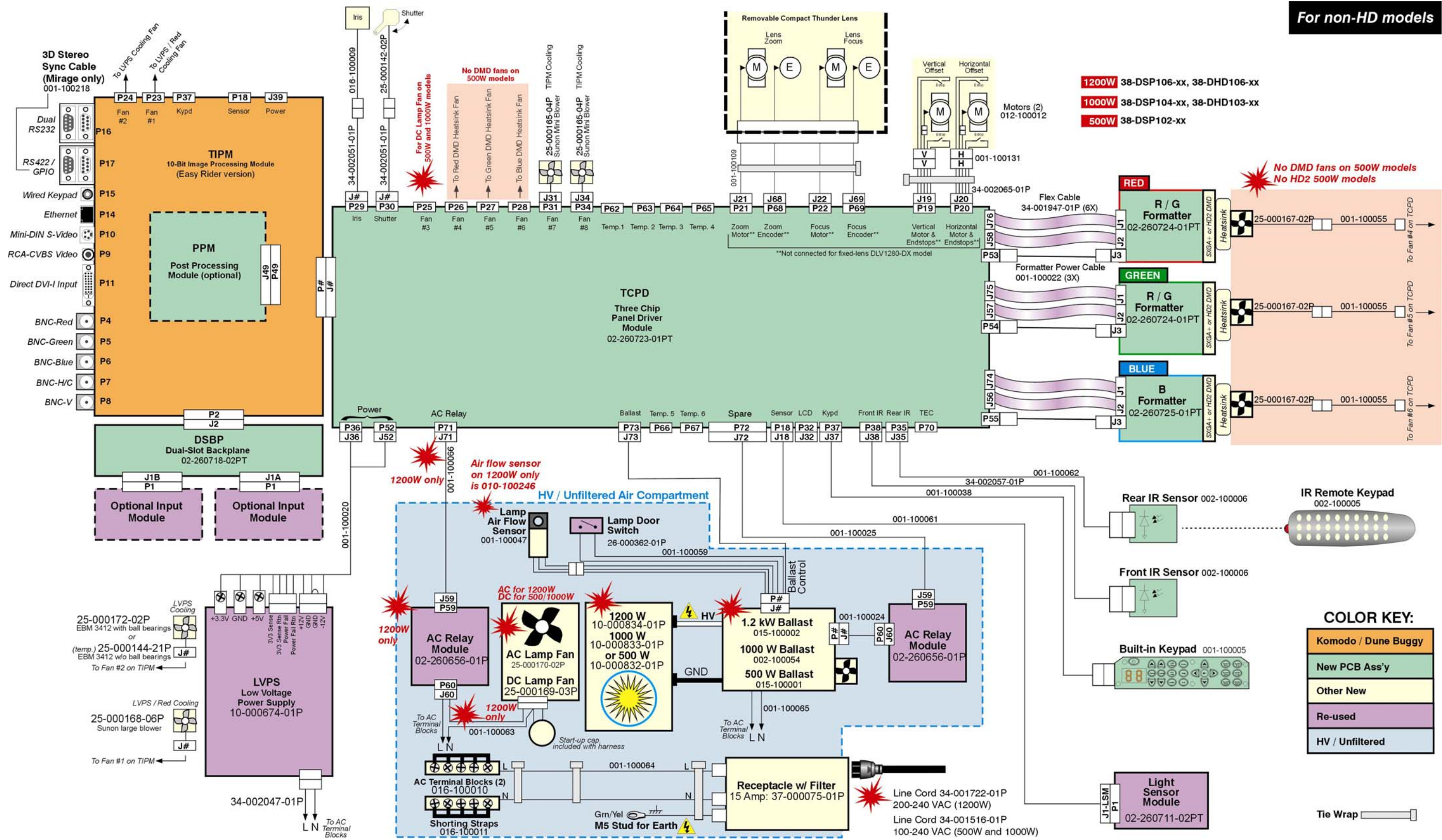
Figure 71. UV Filter

When replacing, locate the marking on the UV filter. It may be a dot on one side or an arrow mark on the edge. This marking identifies the coated surface. The UV filter must be installed with the coated surface facing out towards the lamp.

NOTE: The arrow on the edge of the filter points in the direction of the coated surface. In this case, insert the filter so the arrow points to the inside of the lamp compartment.

Interconnection Drawing

For non-HD models



For HD Models

